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ABSTRACT

This document includes abstracts of research and development projects dealing with agricultural education that were completed in the United States between September 1, 1987, and August 31, 1988. A total of 185 research abstracts are included (71 master's papers or theses, 44 doctoral dissertations, and 70 staff studies. Thirty institutions from 27 states contributed. The following are among the topics covered in the individual research projects: adult education; agricultural education programs (characteristics, context, future directions, funding, staffing); agricultural practices and the industry; agriculture teachers; curriculum and instruction in grades K-12 (competency assessment, curriculum development, implementation, instructional materials and technologies, science in agricultural education, and sequencing and scheduling); decision making; extension education; international education; postsecondary/university programs; psychological type profiles; rural schools; secondary agriculture students; and vocational education. Citations of research and development activities in progress, ERIC accession numbers for previous national summaries, and author and subject indexes are also included. (MN)

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The Nation's Report of R & D in Agricultural Eduation

The Summaries of Research and Development Activities in Agricultural Education

Completed in the United States of America 1987-88

R & D

An Annual Publication of the Agricultural Education Division of the American Vocational Association

Published at Cornell University
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January 1989

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SUMMARIES OF RESEARCH AND DEVELOPMENT ACTIVITIES IN AGRICULTURAL EDUCATION

United States of America
1987-1988

EDITOR – H. DEAN SUTPHIN

Agricultural and Occupational Education

Cornell University
Ithaca, New York 14853

January 1989

Authorized and administered by
the American Vocational Association
Agricultural Education Division Research Committee

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PREFACE

This document is the fourteenth annual *Summaries of Research and Development Activities in Agricultural Education in the United States.* The "Summary of Studies" includes abstracts of completed research projects from September 1, 1987 to August 31, 1988. This is the first time since the publication began that manuscripts have been submitted on disk by a majority of the contributors. Manuscripts sent as hard copy were electronically scanned, so that the entire publication was produced in a desktop publishing environment. It is hoped that this process has improved the appearance and quality of the publication.

A total of 185 research abstracts were submitted. They report on 71 master's papers or theses, 44 doctoral dissertations, and 70 staff studies. Thirty institutions from 27 states contributed to this year's *Summaries.* The abstracts are both author and subject indexed to assist the reader.

The citations of research and development activities in progress are listed alphabetically by state. These citations show the direction of research in agricultural education and may help researchers identify colleagues with similar interests, avoid duplication of efforts, and promote collaboration among researchers on a national basis.

As editor, I would like to recognize and thank those who assisted with the publication including Virginia Barker, for word processing and compiling the manuscripts; Sherri Howell for managing the account; Virginia Burness for mailing and managing the computer disks; and Carol Keene for office assistance. Dr. George Wardlow, Chair of the Agricultural Education Research Committee, Division of the American Vocational Association, and the research committee members authorized the *Summaries.* David L. Call, Dean of the College of Agriculture and Life Sciences; Norman R. Scott, Director of Research; and Richard E. Ripple, Chair of the Education Department, provided the administrative support that made this publication possible. A special thanks is due contributors who gave of their time and who helped move this publication to an electronically generated text.

Copies of the *Summaries* are available from the editor at $9.00 per copy.

Dean Sutphin
Editor

ABSTRACTS
Research and Development Activities Completed

ARIZONA

Amstadter, I. A. (1988). *Animal traction in the Senegal River Valley.* (Research Paper). Tucson: University of Arizona.

The Islamic Republic of Mauritania is facing a dire challenge to both feed its people and find a sustainable agricultural system for its extremely fragile environment. Animal traction use may be a means to achieve this objective. Gaining firsthand insights into both the current level of utilization and the feasibility of expanding animal traction use was the primary purpose of this report, which was based upon six weeks spent in Mauritania during the summer of 1987. The basic observations include: (1) most farmers are very aware of the advantages of using animal traction for cultivation; (2) virtually all farmers are interested in expanding its use; (3) serious constraints exist which limit this expansion; and (4) human settlement patterns are in a dynamic state of flux. This situation presents enormous challenges to the government as it attempts to formulate appropriate land use policies that balance the perceived needs of farmers and herders with those of the fragile environment.

Campbell, G. L. (1988). *The mobility, occupational satisfaction and goal attainment of completers of vocational agriculture in Arizona.* (Research Paper). Tucson: University of Arizona.

The purpose of this study was to measure occupational satisfaction, occupational goal attainment and the mobility of program completers, five or more years after termination of a vocational agriculture program in Arizona. All data were collected from respondents concerning (1) geographic location; (2) occupational and geographic mobility; (3) current job selection/satisfaction; (4) occupational goal setting; (5) influences on current occupations; and (6) male/female response comparisons.

Findings of the study included: (1) completers tended to remain in a geographic region, with most remaining within 25 miles of the home high school; (2) completers were very mobile and tended to migrate toward more populated environments, with job/occupation changes by far the most common reason given for moves; (3) completers in agriculture and agriculture-related occupations were (a) only one-third of the completers, (b) more satisfied with their occupations than completers in other occupations, (c) satisfied with their jobs based on occupational qualification; (4) completers indicated (a) lack of a serious goal in agriculture while in high school, (b) goalsetting was important in high school, (c) post-high school experience was important in career decision making; (5) career decisions were most often made after completion of education and career-related work experiences were an important factor in career decisions; (6) only small variations were noted in the responses based on gender.

Day, P. L. (1988). *The use of an instructional video cassette to determine food selection in the hypertensive patient.* (Research Paper). Tucson: University of Arizona.

This study sought to answer the question whether a videotape that showed patients how to read labels and select food for sodium content and suggested low-sodium menus would cause hypertensive patients to select foods low in sodium, adjust their diets, and reduce their blood pressures more than patients not viewing the tape. The treatment group was shown a film on the selection of low-sodium foods. A posttest was given each group. Food frequency forms were evaluated for milligrams of sodium. The differences in the food frequency forms and the posttests were not conclusive. Blood pressures were not evaluated. The conclusion reached was that more studies are needed to determine the effectiveness of video on food selection by hypertensive patients.

Eljudia, A. H. (1987). *The training needs of agricultural extension agents in Riyadh, Saudi Arabia.* (Research Paper). Tucson: University of Arizona.

The purpose of this study was to determine the educational training needs of agricultural extension agents in Riyadh, Saudi Arabia to provide the basis for an effective training program in the future.

The accessible population included all agricultural extension agents in the Riyadh Cooperative Extension Service.

Data for this study were obtained by the use of a questionnaire mailed through the Directorate of Agriculture and Water in Riyadh to all the agricultural extension agents who worked at the Directorate of Agriculture and Water in June 1987. Data were analyzed to determine the mean score for training needs in an area of training.

Study results indicated that a majority of the items of training were identified as needed training. Only a small percentage of the items of training were identified as having received training. There was no relationship between training needed and training received in items of training.

McCormick, F. G., & Cox, D. E. (1988). *An assessment of instructional units for teaching animal nutrition principles.* (Staff Study). Tucson: University of Arizona.

The purposes of this study were (a) to develop instructional resource units, employing the Principles Approach and utilizing the Inductive Mode, to serve as a teacher reference for teaching selected principles of animal nutrition; (b) to assess the effectiveness of these units by measuring the relative change in students' understanding of the principles resulting from the utilization of the prepared units in instructional programs in vocational agriculture in Arizona high schools; and (c) to validate a criterion-referenced evaluative instrument on Principles of Animal Nutrition. The principles of animal nutrition, upon which the instructional unit was based, were identified by a national jury of experts.

Scores from the pretests and posttests were ranked and paired. Only those scores from subjects who completed both the pretest and posttest were included in the data analysis. The ranked scores, the relative change in understanding between the pretests and posttests, and the difference between the groups were calculated.

When data were compared between overall pretest and posttest mean correct responses, there was a 33.98% increase in understanding by the 519 students involved, which was statistically significant at the .001 level of confidence. Student understanding of each principle group under study also increased. The greatest increase (+54.08%) in understanding was for the "function of feeds," whereas the least percentage increase (+22.76%) was associated with the "utilization of feed by livestock."

The effect of in-service training received by teachers as an influence upon student understanding revealed significant differences. Students taught animal nutrition principles by "trained" teachers showed higher mean score differences between pretest and posttest than did those students taught by teachers in the "untrained" group. The overall difference (34.62% increase) was statistically significant beyond the .01 level of confidence.

Rivard, D. T. (1988). *Educational needs of Arizona aquaculturists.* Master of Science thesis, University of Arizona, Tucson.

The purpose of this study was to determine the status of aquaculture in the state of Arizona, to determine the perceived educational needs of Arizona aquaculturists, to identify their educational and experience backgrounds, and to identify the sources of information that they utilize to meet their needs and to solve problems in aquaculture. An intermediate goal of the study was to compare the differences between private and government aquaculturists.

This study was a descriptive survey and utilized a questionnaire as the instrument. Data were collected via telephone interviews. The target population was all active aquaculturists in the state of Arizona.

Findings included: (1) the aquaculture industry was expanding; (2) water quality management and production methods were the top educational needs; (3) 80% of the aquaculturists have had some college, with 68% possessing at least a bachelor's degree; and (4) other aquaculturists and fisheries professionals were identified as the best sources of aquacultural information.

Summers, C. E. (1988). *Assessing constraints to recession farming.* Master of Science thesis, University of Arizona, Tucson.

The purpose of this study was to develop and field-test an approach based upon soft systems methodology for assessing constraints and anxieties faced by farmers utilizing recession farming as a purposeful activity. The approach in this study was based on soft systems methodology with the intent of constructing root-definitions for recession farming systems. The field testing of the approach utilized three recession farming systems in northeast Thailand, in the province of Loei.

The root-definitions obtained using this approach characterized two of

the systems as capitalistic using intensive agricultural production with limited land and labor. The third system was characterized as subsistence agriculture using few inputs and low returns.

It was concluded that the approach developed in this study accurately identified constraints and differences, as well as similarities, between recession farming systems. The rich picture developed from the farmers' information was adequate to construct the root-definitions. It is recommended that this approach be tested in another region using indigenous personnel trained to conduct open-ended interviews and trained to identify relevant issues and themes.

CALIFORNIA

Whaley, D. C., & Wickler, S. J. (1988). *The need for teaching improvement as perceived by the faculty of the College of Agriculture, California State Polytechnic University, Pomona.* (Staff Study). Pomona: California State Polytechnic University.

This study was conducted to (1) determine faculty perceptions towards teaching improvement in the College of Agriculture, California State Polytechnic University, Pomona; (2) identify educational training of faculty in the college; and (3) identify resources available to faculty for improving their teaching. The population for the study included all full-time and part-time faculty in the college (n=69). Data were collected through the administration of a mailed questionnaire. A total of 87% of the faculty responded through an initial mailing and two follow-up mailings of the questionnaire.

Findings of the study were (1) Sixty-five percent of the faculty had taught at the university level for more than 10 years. (2) More than one-third (39%) indicated that they had no prior teaching before assuming their university teaching posts. Ten faculty were certified to teach at the primary or secondary educational level. (3) Most faculty (74.1%) felt that student evaluations are effective. Although many reservations were expressed about the evaluations, most faculty indicated that they would continue to solicit them even if student evaluations were no longer required by the university. (4) Only 25.5% of the faculty indicated that they had videotaped their teaching for the purposes of improvement.

The responses were generally reflective of the positive attitude of the faculty toward improving their teaching. This attitude was demonstrated by the high number of faculty who disagreed with the statements that "teaching ability" (86.7%) and "teaching improvement" (94.9%) cannot be measured. However, most faculty indicated that there is a need for teaching improvement. Approximately 62% of the faculty felt that the academic community lacks adequate knowledge of learning theory and practice, and 71% felt that there is a lack of a formal program at California Polytechnic Pomona for improving teaching. Therefore, a program aimed at improving teaching may provide beneficial results and useful incentives for the College of Agriculture faculty.

CONNECTICUT

Mannebach, Alfred J. (1988). *Revising and updating the plant science component of the Connecticut vocational agriculture curriculum.* (Connecticut State Department of Education Funded Project). Storrs: University of Connecticut.

The objectives of the project were (1) to review, revise and update the plant science components of the curriculum and to integrate needed competencies into each unit of instruction, (2) to prepare a copy of the plant science component of the Connecticut Vocational agriculture curriculum and enter it into the Connecticut State Department of Education computer system, and (3) to print copies for use by Connecticut vocational agriculture teachers.

The project was conducted as a result of joint planning by the project director and the state consultant for vocational agriculture, Connecticut State Department of Education. The project director, and the project specialist reviewed existing plant science curricula, updated the plant science units of instruction, and worked cooperatively with plant science teachers in the state to obtain input, suggestions, and feedback. Relevant, industry validated competencies from the National Competency Study were identified and integrated into each unit of instruction. The revised curriculum was entered into the state department of education computer system for easy update and revision in future years. Printed copies were made available to vocational agriculture teachers in Connecticut Regional Vocational Agriculture Centers.

Mannebach, Alfred J., & McDonough, Michael E. (1988). *Vocational agriculture's contribution to the common core of learning.* (Staff Study). Storrs: University of Connecticut.

The purpose of this study was to determine the degree to which the Connecticut vocational agriculture program contributed to the Common Core of Learning adopted by the Connecticut Board of Education in January 1987 as its standard of an educated citizen and as its policy on skills, knowledge, and attitudes that are expected of Connecticut's public secondary school graduates.

A vocational agriculture action team composed of a state consultant, a teacher educator, and eight vocational agriculture teachers participated in a two-day state department of education sponsored workshop to arrive at a consensus regarding whether the vocational agriculture program made a major (3), moderate (2), or minor (1), contribution to each of three common core of learning headings and 21 categories under the headings. Results indicated that the Connecticut Vocational Agriculture Program makes its greatest contribution to the major heading of skills and competencies, 83%; followed by attitudes and attributes, 77%; and Understandings and Applications, 31%. Major contributions to the common core were being made in ten categories, moderate contributions in five categories, and minor contributions in six categories. It was the consensus of the team that 100 percent contribution was made in four categories.

It was concluded that the Connecticut vocational agriculture program makes a major contribution to two of the three major headings and to ten of the 21 categories of the common core. It makes its greatest contribution in the skills

and competencies and attitudes and attributes headings, areas which are a strong basis for lifelong learning and success. The program makes its least contribution in the understandings and applications headings, areas which are in large part covered by other specific courses in the secondary school curriculum.

FLORIDA

Arrington, L. R., Cheek, J. G., & Tylke, R. J. (1988). *Student achievement in applied principles of agricultural occupations and its relationship to Supervised Occupational Experience scope.* (Staff Study). Gainesville: University of Florida.

The primary purpose of this study was to determine the relationship between the scope of SOE, as measured by total Productive Man Work Units, and the level of achievement in technical knowledge for students who were enrolled in Applied Principles (tenth grade) classes in Florida in the 1984–85 school year.

The primary research hypothesis was that there is a positive relationship between the scope of an SOEP as measured by PMWU's and the level of achievement on a multiple choice test designed to measure technical knowledge in agriculture.

Six extraneous variables were thought to have a possible positive relationship to student achievement and formed the basis for alternate rival hypotheses. They were cumulative grade point average, parental encouragement and expectations, years of enrollment, involvement in the Future Farmers of America, interest in agriculture, and teacher effectiveness.

The target population consisted of public high school classes in Applied Principles in northeast and central Florida. Data were collected from 98 students in ten schools in the spring of 1986. Data were analyzed using Pearson product moment correlation coefficients; there was a significant ($p<.05$) positive relationship between student achievement and involvement in the FFA, interest in agriculture, grade point average, and SOE scope. When data were analyzed by stepwise multiple regression, two variables, interest in agriculture, and GPA significantly explained variance in student achievement ($p<.05$).

Avails-Rodriguez, L. N. (1988). *Assessment of competencies possessed by students enrolled in Ornamental Horticulture.* Master of Science thesis, University of Florida, Gainesville.

The purpose of this study was to determine the extent to which high school students enrolled in Ornamental Horticulture I during the 1987–88 school year in Florida possess the competencies specified in the objectives of the course. To achieve this purpose, three objectives were developed.

Data were collected through the mail in the fall of 1987 and spring of 1988. The Ornamental Horticulture Achievement Test (OHAT), a multiple choice test, was designed to assess students' performance in Ornamental Horticulture. A pretest/posttest design was used. Data were collected from 21 schools which included 21 teachers and their 302 students. Statistical analyses of the data included frequency, percentage, means, T-test, and analysis of variance with the Scheffes' test.

The findings of this study were as follows: (1) There were significant ($p<.001$) differences between the pre-test and post-test mean scores; (2) there was no significant difference ($p>.05$) between mean scores on the pre- and post-OHAT and student sex, career plans, and parental involvement in the school; (3) students who were FFA members scored significantly higher ($p<.01$)

on the pre- and post-OHAT than nonmembers; (4) students having an SOE program scored significantly higher ($p<.05$) on the pre- and post-OHAT than students having no SOE program; and (5) students who were enrolled previously in agricultural classes scored significantly higher ($p<.05$) on the pretest than students who had not been enrolled in agricultural classes; (6) students living in a rural area but not on a farm scored significantly higher ($p<.01$) on the pretest than students living in suburban areas; (7) there were significant differences between reasons for enrollment in Ornamental Horticulture and the mean scores on the pre- and post-OHAT; (8) students who rated their teachers as highly effective scored significantly ($p<.0001$) higher on the posttest than students who rated their teachers as highly ineffective.

Cheek, J. G., Arrington, L. R., & Noxel, S. A. (1988). *The relationship of supervised occupational experience program scope to student achievement in fundamentals of agribusiness and natural resources.* (Staff Study). Gainesville: University of Florida.

The primary purpose of this study was to determine the relationship between the scope of SOE, as measured by total Productive Man Work Units, and the level of achievement in technical knowledge for students who were enrolled in fundamentals of agriculture classes in Florida in the 1985–86 school year.

The primary research hypothesis was that there is a positive relationship between the scope of an SOEP as measured by PMWU's and the level of achievement on a multiple choice test designed to measure technical knowledge in fundamentals.

Six extraneous variables were thought to have a possible positive relationship to student achievement and formed the basis for alternate rival hypotheses. They were cumulative grade point average, parental encouragement and expectations, years of enrollment, involvement in the Future Farmers of America, interest in agriculture, and teacher effectiveness.

The target population consisted of public high school classes in Livestock Production in Florida. Data were collected from 249 students in nine schools in the spring of 1986. Data were analyzed using Pearson product moment correlation coefficients; there was a significant ($p>.05$) positive relationship between student achievement and involvement in the FFA, interest in agriculture, parental involvement and expectations, teacher effectiveness, and grade point average. The primary independent variable, supervised occupational experience program scope, was not significantly related to student achievement. When data were analyzed by stepwise multiple regression, two variables, interest in agriculture and cumulations GPA, significantly explained 18.59% of the variance in student achievement ($p>.05$).

Martinkovic, W. F. (1988). *Beliefs of Florida's lawn and ornamental pest control operators and degree of adoption of urban landscape related pest management practices.* Master of Science Thesis, University of Florida, Gainesville.

The central purpose of this study was to determine the awareness and

adoption of urban landscape IPM practices by lawn and ornamental pest control operators (PCOs) in Florida. To achieve this purpose nine objectives were developed.

Data were collected from 301 lawn and ornamental PCOs by a mailed, closed-form questionnaire. Analyses of data included frequency distributions, percent responses, means, Chi-squares, and correlation coefficients.

The major findings were that most lawn and ornamental PCOs were aware of urban landscape IPM and the most widely adopted urban landscape IPM practices by lawn and ornamental PCOs were the cultural practices of improved water and fertilizer use, proper mower height and sharp mower blades, removal of grass clippings and leaves, and the use of resistant plant varieties.

Another finding of this study was that lawn and ornamental PCOs perceived an increase in regulations concerning pesticides used in the urban landscape; safety practices utilized by PCOs; the cost of chemicals; the number of insects becoming resistant to commonly used pesticides; and public awareness about alternative types of pest control. Lawn and ornamental PCOs perceived that urban landscape IPM is compatible with traditional pest control methods, is not too complex to use in the pest control business, will not decrease profits for PCOs, can be tested on a limited basis by PCOs and will increase the need for PCO services.

Lawn and ornamental PCOs were predominately male with an average age of 42 years; highly educated; licensed for less than 10 years; employed in either a small one to two full-time employee pest control business or a large pest control business with 15 or more full-time employees; and involved in many aspects of the pest control business.

Analysis of data revealed that lawn and ornamental PCOs were interested in receiving information on urban landscape IPM, with printed material through the mail being the most popular way of receiving this information, followed by attending educational courses and the use of a videotape.

Based on Spearman-rank correlation analysis, lawn and ornamental PCOs with more years of licensing and work experience are less likely to adopt urban landscape IPM practices.

McGhee, M. B., Rancharan, J. R., & Cheek, J. G. (1988). *Follow-up study of 1975–1985 agricultural education graduates from the University of Florida.* (Staff Study). Gainesville: University of Florida.

The purpose of this study was to determine the career patterns of University of Florida agricultural education graduates (1975–1985) and to assess their perceptions of the effectiveness of selected aspects of the curriculum in preparing them for their careers.

Data were collected via mail questionnaires from 134 (83.75%) of the 160 graduates in the accessible population. Twenty-nine graduates of the 189 total graduates were not able to be located. Nonresponse follow-up showed no significant differences between respondents and nonrespondents. Researcher-developed instruments were used to identify perceptions of graduates concerning the adequacy of coursework, faculty advisement and teaching

behaviors, and value of participation in student organizations. Reliability estimates (Cronbach's alpha) ranged from .80 to .96.

Findings revealed that respondents perceived adequacy of preprofessional, technical, and professional coursework to be above average to good. The majority indicated that the amount of preprofessional, technical, and professional coursework should be maintained, increased, and maintained, respectively. Most respondents perceived the quality of faculty advisement as being very satisfactory. Likewise, teaching quality of faculty was perceived as being very high (4.4 on a 5-point scale). Participation in the Agricultural Education Society was perceived by the graduates to have been of value to them. A majority of the respondents indicated they had belonged to one or more other campus organizations. Relative to a demographic profile of graduates, the majority were male, married, currently teaching vocational agriculture in one-teacher departments, living within 49 miles of hometown, and would major in agricultural education again.

Ramey, V. A. (1988). *Educational program needs assessment of aquatic pesticide applicators and supervisors in Florida.* Master of Science thesis, University of Florida, Gainesville.

The purpose of this study was to collect data about the attributes, attitudes, beliefs, and behaviors of licensed aquatic herbicide applicators and field supervisors in Florida. The data can be used in helping plan and develop extension educational courses and materials for the target population. Mail survey questionnaires having 231 questions and agree-disagree type opinion statements were returned by a randomly selected sample of 419 subjects.

The study found that approximately 1,500 people in Florida are employed as aquatic herbicide applicators and/or supervisors. As many as 40% of them may be unlicensed to apply aquatic herbicides. More than three-quarters of them are employed by tax-supported public agencies, and approximately half have less than six years experience. Their most frequent field work situations are in irrigation and flood control systems and in lakes or ponds. The aquatic plants they manage most frequently are emergent water grasses and cattails and the floating plants, water-hyacinths and algae. The herbicides they most frequently use in aquatic situations are glyphosate, diquat, 2, 4-D and copper formulations. Almost one-quarter of them operate harvesting and cutting machinery in addition to applying herbicides.

Nearly one-half do not "understand the concept of maintenance control" and approximately 40% indicated that they could not always identify the most troublesome aquatic weeds in their areas. More than one-third believe that aquatic herbicides are being "misused by applicators" and almost one-third believe that their health is being affected by using herbicides.

Applicators and supervisors rely more heavily on chemical companies than on public educational and regulatory agencies for their information needs, even though they do not rank chemical companies among their best sources of information. Less than half have attended a meeting of the Florida Aquatic Plant Management Society, which was rated as the most useful source of information for their work, and only one-third have attended IFAS short courses, which were rated as the second most useful source of information.

Respondents have a very strong desire for more educational courses and materials. However, the need is not being adequately met. They want more courses and materials regarding aquatic herbicide advanced training, maintenance control, aquatic plant identification, and aquatic ecosystem ecology. They believe courses should be offered every year, preferably in the winter.

The study also found that the questions most often asked by the public have to do with reasons for aquatic plant management and safety of herbicide use.

GEORGIA

Flanders, Frank B. (1988). *Determining curriculum content for nursery/landscape course work in vocational agriculture for the 21st century: A futures study utilizing the Delphi technique.* Doctoral dissertation, University of Georgia, Athens.

The purpose of this study was to determine curriculum content for nursery/landscape coursework in vocational agriculture to prepare students for nursery/landscape careers into the twenty-first century. Specific objectives were to determine if the Delphi technique could derive consensus among nursery/landscape experts concerning the future of the industry, describe the nursery/landscape opinion leaders, and determine the characteristics of the nursery/landscape industry in the year 2000.

This was a national study utilizing a two-round modified Delphi technique. Collection of data consisted of four phases: instrument development, selection of a panel of experts, and rounds one and two of the Delphi survey.

A structured Delphi instrument consisting of 57 items on a Likert-type scale was developed from the literature. The instrument was reviewed for content and face validity by a 17-member panel of experts. Twenty-five nursery/landscape experts were selected to participate through a national nomination process utilizing state nursery/landscape association executive secretaries and American Association of Nurserymen officials.

Stability of responses between rounds, group agreement, and item ranking were determined statistically. Consensus was reached on an item if 60% of the respondents were in agreement and the group answer fell within the agree or disagree range.

It was concluded that (1) the Delphi technique was effective in determining consensus among nursery/landscape experts for the purpose of determining curriculum content; (2) opinion leaders in the nursery/landscape industry were business leaders primarily involved in wholesale growing; (3) the nursery/landscape industry will grow and change rapidly into the twenty-first century with increasing employment opportunities and a corresponding need for training programs in nursery/landscape.

Twenty-nine content items were identified as essential for inclusion in the vocational agriculture curriculum to prepare workers for the nursery/landscape industry of the future.

Beitia, M. G. (1987). *Factors to consider in evaluating and designing the future pre-service technical agriculture curricular component of a B.S. degree in agricultural education at the University of Idaho.* Master of Science thesis, University of Idaho, Moscow.

The purpose of this study was to identify the factors enabling the Agricultural Education Department at the University of Idaho (UI) to evaluate and update the pre-service technical agriculture curriculum for the B.S. degree in Agricultural Education.

Two Idaho populations were surveyed. The first consisted of experts in agricultural education and vocational agriculture, a group from the agriculture industry that was also associated with vocational agriculture, and a group of Idaho's leading secondary agriculture instructors. The second consisted of a group associated with teacher education, supervision, certification, and administration; instructors in the pre-service technical agriculture curriculum at UI; representatives of the agriculture industry; and all secondary agriculture instructors in the state.

The two most important factors identified were (1) employability of current agricultural education graduates, and (2) the department's ability to update vocational instructors through in-service programs.

The following recommendations are based on the findings of the study: (1) The pre-service technical agriculture curriculum should be evaluated on its ability to meet the needs of agricultural education graduates and their students, (2) the employability of agricultural education graduates should influence the pre-service technical agricultural curriculum, (3) in-service training of past graduates in areas requiring technical competence should be strongly considered, (4) practical skills should be incorporated into more of the technical agriculture courses, (5) university agriculture curricula must incorporate trends in the agriculture industry, (6) the balance among the technical agriculture areas must be maintained as the curriculum changes, (7) the clientele groups involved in decision making should be considered when determining the pre-service technical agriculture curriculum, (8) the ability to measure technical agriculture competence should be investigated and a method derived to evaluate it, and (9) the in-service needs of vocational agriculture instructors should be related to changes in the agriculture industry.

Blattner, N. J. (1988). *Experimental evaluation of selected agriculture in the classroom units of instruction for fourth grade students in Idaho.* Master of Science thesis, Boise State University, Boise.

This study attempted to determine the effectiveness of five units of instruction in the Agriculture in the Classroom curriculum guide for fourth grade teachers in Idaho. Effectiveness was evaluated by (1) comparing student pretest and posttest scores on written questions about the five units, (2) comparing change in pretest and posttest scores of students as arranged by three teacher groups – agricultural background, no agricultural background, and

control, (3) comparing students' pretest and posttest scores to determine significant differences between students of rural or urban background. The quasi-experimental design was the pretest-posttest control group design. Two hundred fifty-seven students were pretested on the five units. Of those, 156 students were presented the curriculum as treatment. All the students in the study were then posttested.

Comparison of pretest and posttest scores showed significant student gains in all of the units taught. Students in the treatment group, taught by either the non-agriculture or advisory committee teachers, showed a significant increase in posttest compared to pretest scores on all units, indicating that the curriculum can be successfully taught regardless of the teacher's agricultural background.

No significant or practical differences were shown when pretest and posttest scores were compared between rural and urban background, indicating that rural students can benefit from the curriculum as much as urban students.

The research findings led to the following recommendations: (1) assess agricultural knowledge of participating fourth graders in two years to determine knowledge retention; (2) survey the fourth graders who participated in the study when they enter high school vocational agriculture programs to determine the effect "Idaho Ag in the Classroom" curriculum played in their decisions to take vocational agriculture; (3) conduct an agricultural awareness study between rural and urban students across all grade levels, kindergarten through twelfth grade.

Carter, B. L. (1987). *Tools and equipment necessary to conduct agricultural mechanics instruction in vocational agriculture programs.* Master of Science thesis, University of Idaho, Moscow.

The purpose of this study was to determine the tools and equipment necessary to teach the core curriculum in agricultural mechanics in vocational agriculture programs in the state of Idaho. Specific aims were to (1) develop a current tool and equipment list from the new core curriculum; (2) determine the value of agricultural mechanics inventories in the schools; (3) determine the level at which the new core curriculum for agricultural mechanics is being taught; and (4) determine if a significant difference exists in the perceived importance of instructional areas between those instructors who teach that area and those who do not.

The study surveyed all 83 instructors of vocational agriculture in Idaho during the school year 1985-86, as well as 11 university teacher educators from 10 western states who train potential vocational agriculture instructors in agricultural mechanics skills.

The instructors perceived 45 items added to the Idaho Recommended Tool and Equipment List as necessary to teach the core curriculum. Agricultural mechanics inventory values for Idaho are substantially below the national averages of over $50,000: 12.2% of the instructors indicated values over $50,000; 54% indicated values over $20,000. The core curriculum in agricultural mechanics is generally being followed; 16 of the 19 core areas are being taught by over 50% of the instructors. Several instructional areas are generally regarded as unnecessary.

The following recommendations are based on the findings of this study: (1) The modified recommended tool and equipment list should be adopted in Idaho's vocational agriculture programs; (2) the inventory values of the agricultural mechanics programs should be increased; (3) the core curriculum for agricultural mechanics should be continuously updated; (4) University of Idaho graduates should continue to receive technical training in the core agricultural mechanics areas before graduation; (5) opportunities must be provided for vocational agriculture instructors to update their skills; and (6) instruction in areas with low participation should be increased.

Gor, C. O. (1988). *Sources of information on new and/or innovative farming practices and how they are accessed by farmers in Nez Perce County of the state of Idaho.* Master of Science thesis, University of Idaho, Moscow.

The purpose of this study was to identify and describe the sources of information on new or innovative farming practices considered credible, beneficial, and preferable by farmers in Nez Perce County, Idaho. The specific objectives of the study were to (1) identify sources of information; (2) describe how farmers in Nez Perce County access them; (3) identify the personal, situational, and intervening variables that influence farmers in seeking information on new or innovative farming practices.

A 23-item questionnaire was mailed to farmers identified through Cooperative Extension mailing lists; 176 of 225 returned survey instruments were usable. Data were analyzed by the Statistical Package for the Social Sciences (SSPSx, release 2.1) and subprogram Frequencies, Friedman's Two-way ANOVA, and the Mann- Whitney U-Test.

Major findings of this study included (1) Nez Perce County farmers are most likely to use interpersonal sources of information (CES faculty, dealers, distributors, neighbors) during the awareness, interest, and decision stages of the adoption and diffusion process. Mass- media information sources (agricultural periodicals, College of Agriculture research publications) were also highly preferred. (2) Farmers in Nez Perce County preferred interpersonal methods of presenting agricultural information (demonstrations, tours, field trips, group discussions, consultants). Except for publications, journals, or other bulletins, the mass- media methods of presenting agricultural information were the least preferred by most respondents. (3) Although the CES was highly rated by respondents, other equally useful sources of information were mentioned. CES faculty should assist farmers in identifying and using other perceived beneficial and credible sources and methods of presenting agricultural information.

Ledington, R. L. (1988). *The impact of educational reform on enrollment trends in Idaho secondary schools from 1983-84 to 1987-88.* Doctoral dissertation, University of Idaho, Moscow.

This study determined the proportion of students from a population that included all Idaho public secondary schools who enrolled in 21 subject areas from 1983-84 to 1987-88. The data came from a report that listed all instructors, course titles, and number enrolled in each school. Courses were

categorized and enrollment recorded by subject.

In the comparison years 1987–88 and 1983–84, the highest proportional enrollments were in English, humanities, and practical arts; in 1987–88, English ranked highest and the practical arts and humanities second.

For subject categories that are state graduation requirements whose standards were increased, enrollment increased in English, health, and reading, whereas enrollment was fairly stable in mathematics, speech, and the combined humanities category (humanities, social studies, art, music, and foreign language).

Proportional enrollment in subject areas that are state graduation requirements but whose minimum standards were not increased (science, consumer economics, physical education, and U.S. history) generally remained stable over the last five years.

Of elective categories (practical arts, computer, special needs, and other), enrollment in practical arts declined the most, whereas computer increased substantially.

School size appears to be an important factor; larger districts were affected more than smaller schools. Schools with a seven-period daily schedule are generally maintaining higher enrollments than schools with six periods.

The following recommendations were developed from the findings: (1) assess current minimum graduation requirements in view of the perceived and desired participation of students in various subject categories; (2) conduct an in-depth investigation to determine to what extent local curricula are being modified to comply with the new requirements; (3) develop policies to assist schools with identification of limiting factors and implementation of the new standards; and (4) the state Board of Education should experiment with alternative scheduling methods to study the effect on access to instructional programs.

Pals, D. A. (1987). *The acceptance of a non-traditional SOE Program by selected Idaho vocational agriculture students.* (Idaho Agriculture Experiment Station Staff Study). Moscow: University of Idaho.

The purpose of this research was to determine the level of acceptance of the nontraditional SOE concept by selected Idaho vocational agriculture students and to determine if there was a significant difference in the acceptance of nontraditional SOE concept between those students using it (treatment) and those who did not (control). A total of 176 treatment students and 109 control students were administered a pretest and posttest instrument to determine acceptance of nontraditional SOE. Information was also collected from the vocational agriculture instructors who conducted the treatment.

Student pretest and posttest questionnaires showed no practical significant difference in student attitude toward SOE as a result of the incorporation of the nontraditional SOE concept into the vocational agriculture curriculum. However, student attitudes toward SOE improved slightly after they participated in the nontraditional SOE program.

Based on the findings of this study, the following recommendations were made: (1) the nontraditional SOE concept must be revised if the vocational agriculture instructors are to accept it; (2) more research needs to be conducted

to develop a reliable instrument to measure student attitudes towards SOE; (3) this research should be modified and repeated in other states.

Pals, D. A. (1988). *Attitudes of University of Idaho, College of Agriculture faculty toward the improvement of teaching.* (Idaho Agricultural Experiment Station Staff Study). Moscow: University of Idaho.

The purpose of this study was to determine the faculty attitudes toward teaching improvement in the College of Agriculture, University of Idaho. The specific objectives were to (1) determine the educational training of the College of Agriculture faculty, (2) assess faculty attitudes toward improving their teaching skills, (3) identify types of education training currently available for College of Agriculture faculty, (4) collect selected demographic information on the College of Agriculture faculty. Of 107 questionnaires mailed, 93 were returned, a response rate of 86.9%.

Over one-third (35%) of College of Agriculture faculty had five or fewer years of teaching experience. Sixty-five percent of the teaching faculty in the college have less than a 50% teaching appointment. Three courses in education are potential faculty improvement opportunities: (1) Strategies for Teaching—methods, (2) Electronic Media-aided/Visual Aids, and (3) Curriculum Development and Evaluation. Most of the faculty indicated they would use Ag Communications more in the development of visual aids (71.6%), use peer classroom observation (63.4%), and use videotape review of teaching (60.0%). Nearly one-third of the faculty feel teaching can be developed only through experience (28.2%); excellence in either teaching or research is inevitably at the cost of the other (30.8%); members of the academic community possess adequate knowledge of learning theory and motivation (27.3%).

The following recommendations were made from the findings of this study: (1) Because many faculty members are relatively new teachers, a teaching improvement program should be developed; (2) the Resident Instruction Advisory Committee should consider the interest in education courses and Ag Communications as opportunities to develop workshops to improve teaching; (3) because approximately one-third of the faculty see some barriers to successful faculty development programs, planning and developing such programs must proceed with tact and caution; (4) the tone of the responses to the questionnaire indicated a positive atmosphere in the College of Agriculture for a faculty development program.

Simonson, D. L. (1988). *An evaluation of Idaho's Master Gardener program.* Master of Science thesis, University of Idaho, Moscow.

The primary purpose of this study was to evaluate the Cooperative Extension Service's Master Gardener program as perceived by active and inactive Master Gardeners (MGs) in 11 counties of Idaho. A total of 159 questionnaires were mailed and 132 returned for a response rate of 83%.

Major findings were that MGs most frequently had the following characteristics: female, 21–44 years of age, had earned a high school diploma, were working more than 9 hours per week on horticultural activities, spent over

$400 on these activities in the past year.

Sixty-five percent of the MGs learned about the program through a local newspaper, and about half are active, first-year MGs who will devote 31–40 hours of volunteer time to the program per year. Most MGs said they would be active in the program next year and are interested in a state MG organization, monthly update classes, and periodic field trips and tours.

All aspects of MG training were rated high. MGs indicated that Extension personnel gave helpful aid to them and made resources available for use when answering questions requesting home horticultural information.

More than half of the responding MGs became involved in the program to increase their horticultural knowledge. Availability of more time would be the most important stimulus to encourage inactive MGs to rejoin the program.

Recommendations included targeting groups with demographics similar to those of the MGs for improved promotion of all types, increasing participation in community activities, responsibilities for veteran MGs, availability of literature dealing with local plant problems, and "hands-on" training, examining possibilities of college credit for MG work, and developing evaluation forms for clientele use.

ILLINOIS

Illinois State University, Normal

Walker, Paul M., & Wood, Jeff A. (1988). *An evaluation of students entering and exiting agriculture science, agribusiness, biology and chemistry curriculums.* (Staff Study). Normal: Illinois State University.

Data collected from 1,384 students graduating during a six-year period between 1982 and 1987 were compared to determine if the most academically capable students are entering the agricultural science (Animal Science) field and to evaluate their success upon graduation. Criteria examined included high school ACT scores, high school percentile ranks (HSP), college accumulated grade point averages (Acc GPA), and responses to a survey regarding placement success.

Composite ACT scores were higher ($p < .05$) for students entering Biology (B) and Chemistry (C) than for students entering Agriculture Science (AS) or Agribusiness (AB) comparing 23.22, 24.45, 19.59, and 20.35 respectively. Students entering B and C had higher ($p < .01$) ACT natural science scores than students entering AS or AB. English ACT scores were also higher ($p < .01$) for students entering B and C compared to those entering AS or AB. No differences ($p > .05$) were observed in Math ACT scores between the disciplines. Students entering C had a higher ($p < .02$) HSP than students entering B which was higher than students entering AS. No difference ($p > .05$) was observed in HSP for students entering AS or AB. Regardless of college major, junior college transfer students had lower ($p < .01$) HSP than nontransfer students. No differences ($p > .05$) were observed in Acc GPA between majors. When pooled across majors, transfer students had lower ($p < .02$) Acc GPA than nontransfer students.

For those graduates obtaining positions related to their majors, C graduates started at significantly higher salaries. Significantly fewer students graduating in B were able to obtain a job related to their majors. This study suggests academically superior students are entering B and C rather than AS, and recruiting strategies should be more successful if targeted towards students interested in B.

Wood, Jeff A. (1988). *Evaluation of two testing schemes on cognitive achievement in a large undergraduate class.* (Staff Study). Normal: Illinois State University.

The purpose of this study was to compare the traditional multiple choice test format to an experimental evaluation scheme called Multi Digit Testing (MDT). An experimental study was designed to compare student cognitive achievement on formative and summative evaluations.

Findings from the experimental study showed that students who were evaluated under a traditional multiple choice testing regime demonstrated significantly higher cognitive achievement scores over their cohorts who were evaluated under the experimental testing regime called MDT. For purposes of the experiment, students ($n = 95$) were randomly divided into two groups for testing, although the class remained intact for lectures. Subjects in the control

group (n = 49) scored significantly higher on the first two formative evaluations ($p < .001$). Students in the experimental group (n = 46) scored higher though not significantly higher on a summative evaluation.

It was concluded that students who were evaluated under the experimental testing regime, MDT, suffered no detrimental effects on cognitive achievement. Further research needs to be conducted on experimental evaluation schemes like MDT.

Southern Illinois University, Carbondale

Ahmad, A. T. (1985). *Translation of microcomputer agricultural software from the English language to the Arabic language.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to take the first step in developing agricultural software for use in Arabic speaking schools. The first step in this process was to describe the readability and comprehensibility of this researcher's translated material. It is hoped that this study will provide valuable insights into the process of translation of agricultural software from English to Arabic.

Based on the results, the researcher concluded: (1) Overall, the bilingual (Arabic and English) graduate students at SIU-C considered the material translated to Arabic to be readable. (2) The same group of bilingual (Arabic and English) graduate students at SIU-C considered the material translated to Arabic to be comprehensible. (3) The microcomputer program in BASIC language which was translated into Arabic was also considered readable by the bilingual students. (4) The microcomputer program in BASIC language which was translated into Arabic was also considered comprehensible by the bilingual graduate students.

Allen, L. M. (1986). *Construction and validation of an introductory lesson plan in beef production.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to develop and validate a curriculum unit to aid instructors teaching introductory beef production methods to high school agriculture students.

Based on the results, the researcher concluded: (1) Materials developed contained factual information that was organized in a straightforward manner. (2) Materials developed contained information the producers considered introductory and basic to successful beef production. (3) Student skills developed were basic level skills needed by entry level employees in beef production.

Emmons, E. P. (1988). *An evaluation of the agricultural machinery utilization at Horseshoe Lake Conservation Area, Alexander County, Illinois.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to evaluate the agricultural machinery utilization at Horseshoe Lake Conservation Area.

Based on the results of this study, the researcher concluded: (1) The employees at Horseshoe Lake used practices similar to those performed by farm producers/operators in Alexander County, Illinois. (2) The number of acres planted in grain at Horseshoe Lake was four times greater than that planted by producer/operators in Alexander County, Illinois. (3) The time spent driving to and from fields at Horseshoe Lake was three times greater than the time spent driving by producer/operators in Alexander County, Illinois. (4) Driving tractors or combines on public roads is common to both producer/operators and employees at Horseshoe Lake. (5) Less than 15% of the farm producers/operators in Alexander County spent as much money on repairs to equipment as did those at Horseshoe Lake. (6) Fifty-seven percent of the farm producers/operators performed preventive maintenance procedure as compared to the employees at Horseshoe Lake. (7) The amount of horsepower ranged from .344 at Horseshoe Lake to .160 used by the producer/operators.

Emmons, S. (1987). *The development of an instructional video for mig welding.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to develop an instructional video for MIG welding.

Based on the results, the researcher concluded that an instructional video (1) provides instructional goals for those participating; (2) changes the attitudes of those participating; (3) increases awareness of educational media; (4) provides recognition for those who participated; (5) provides an educational service to other teachers.

Jeralds, L. E. (1987). *A procedure for collecting vo-ag information from and disseminating Vo-Ag information to Vo-Ag teachers in the Secondary Education vo-ag programs in Illinois.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to discuss the procedure for gathering from and disseminating to Illinois vocational agriculture educators, information concerning trends and product data describing the schools and students of the secondary educational vocational agriculture programs.

Based on the results, the researcher concluded that the use of the survey report strategy will encourage the participation of all the schools in Illinois, by fostering a competitive spirit about the standing of each school from year to year. The survey reports will provide valuable information to vocational agriculture teachers, vocational agriculture programs, and school administrators concerning the results of their efforts and possible changes necessary to maintain the vocational agriculture programs.

Koehn, R. L. (1987). *The evaluation of goals and components of a high school vocational agriculture program.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to determine a priority ranking of the eleven vocational agriculture goals used by effective vocational agriculture programs and a priority ranking of the six vocational agriculture program components.

Based on the results, the researcher concluded: (1) Administrators/board members, farmers, and former students reported high levels of importance for vocational agriculture program goals and components. (2) When ranking the eleven program goals on their importance there was agreement from administrators/board members,farmers, and former students. (3) When ranking the same eleven goals as in conclusion no. 1, there was no relationship or opinions between farmers and students. (4) When ranking the six.components on their importance to accomplishing the eleven program goals, there was relationship in the responses.

Long, K. L. (1987). *Selected job components for newly employed youth advisors.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to decide what components, including (1) general topics, (2) extension education methods, and (3) other areas do experienced youth extension advisers consider to be most important for first-year youth advisers.

Based on the results, the researcher concluded that advisers tended to rate the general topic job components higher than the education methods or other areas. Advisers felt that volunteer recruitment was the most important component, followed by public speaking skills, personal visits/contacts, volunteer training, volunteer management, committee involvement, program planning and maintenance, and time management training. Items with lower averages included extension and politics (8.89), education exhibits (8.79), television/video (8.42), extension reporting methods (8.30), and tour and field days (8.05). Advisers considered the rest of the components to have medium importance.

Nordin, Z. A. B. M. (1987). *Evaluation of three airflow solar collector absorbers constructed of inexpensive and readily available materials.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to construct and evaluate three low-cost, flat-plate, airflow solar collector absorbers using readily available, inexpensive materials. Based on the results, the researcher concluded that the energy absorption levels were greater in the aluminum containers than in the corrugated containers.

Nyako, A. B. U. (1987). *Tillage study utilizing the lister and tandem disk in southern Illinois.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to determine if there are advantages in using lister tillage followed by disking compared to conventional tillage that disks twice on corn and soybean production in this region of southern Illinois.

Based on the results, the researcher concluded that planting on lister-disked and disked seedbeds does not show any overwhelming evidence of advantage for either of the two seedbed treatments. However, plants seem to be slightly taller in the lister-disked plots. No distinct advantage was found over methods used in other studies conducted in this region of southern Illinois, but this tillage method could be used with no detrimental effects. There was no distinctive advantage in yields; it is certainly a tillage option.

Paulsmeyer, B. L. (1987). *What characteristics of agriculture programs in high schools with enrollments under 200 students are useful for the future of vocational agriculture in small high schools?* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to determine characteristics of small agricultural programs and to mention the plight of small school vocational agriculture program.

Based on the results, the researcher concluded: (1) Enrollments of small high school vocational agriculture programs average 33 students; most of the students had farm backgrounds, SOEP'S, and were FFA members. (2) Most chapter advisors in small schools tended to stay in one location once hired. (3) Most chapter advisors had an adequate amount of education: 54% had bachelors degrees, 29% had masters degrees. (4) Most chapter advisors had ten-month contracts. (5) The average classroom size and shop space was adequate for small school agriculture departments. (6) Horticulture lab space and office space was inadequate in small school agriculture departments. (7) The average departmental budgets were adequate. (8) Most small school vocational agriculture programs have courses for the jobs available in the community (97.6%). (9) A large number of students in small schools will go to college in the fall of 1985 (60%). (10) Small high school vocational agriculture programs lack active alumni associations and adult education. (11) The three factors that closed programs down were (1) lack of funds, (2) lack of sufficient numbers of agriculture students, (3) consolidation.

Sharma, T. N. (1986). *Role of Karnali Technical School, Jumla, Nepal in the preparation of youth for employment: A follow-up study of graduates and their employers.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to assess the role of Karnali Technical School, Jumla, Nepal in the preparation of youth for employment as perceived by its graduates and their employers.

Based on the results, the researcher concluded: (1) KTS has been

successful in the preparation of its graduates for employment. (2) Karnali Technical School (KTS) graduates are being employed in the field for which they were trained. (3) As indicated by KTS graduates, their school adequately prepared them for the job. (4) Employers have found the job preparation of KTS graduates to be satisfactory. (5) The graduates of KTS are familiar with and can use tools and equipment used in their jobs. (6) In general, the graduates, who were employed were satisfied with their jobs. (7) The effort of KTS faculty to place their students was insufficient. (8) The instructional environment of KTS was excellent to good in the view of the graduates and their employers.

Sloan, A. E. (1986). *A comparison of spring ridge tillage to conventional spring tillage.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to determine if there are advantages in using spring ridge tillage over conventional spring tillage on corn and soybean production in southern Illinois.

Based on the results, the researcher concluded that ridge tillage took less time, power, and fuel; but results of other studies at that time were inconclusive.

Smith, J. P. (1986). *An analysis of storage methods and the resulting nutrient content of corn stillage.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to study the effects of storage on whole stillage, drained stillage and various stillage and corn stover mixtures, to determine the crude protein content and pH levels, and to determine if there is a difference in the crude protein content and pH levels of samples stored in sealed and unsealed containers.

Based on the results, the researcher concluded: (1) The WS feed contained solid portions that settled during storage, which would cause severe handling problems. (2) The DS feed contained large amounts of liquid, which would also cause storage and handling problems. (3) The 1 CS: 5.7 WS mixture of CS and WS contained a crude protein level adequate for consideration as an animal feed. Seepage did appear in the feed, which could cause storage and handling problems. (4) No significant differences in crude protein levels could be detected between identical feeds stored in unsealed and sealed containers. (5) The 1 CS: 1 WS and 5 CS: 1 WS mixtures of CS and WS contained very low amounts of crude protein. (6) The 1 CS: 1 WS mixture stored in unsealed containers molded completely through the material. (7) The 1 CS: 5.7 WS mixture stored in unsealed containers molded around the edge of the material.

Tense, A. I. (1987). *The evaluation of grain (Zea mays indentata) storage methods under a modified environment to determine grain quality preservation.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to evaluate maize storage methods under a modified storage environment to determine grain quality preservation.

Based on the results, the researcher concluded that maize stored in airtight glass jars with or without oxygen has a potential for preserving grain quality. The physical appearance, germination rate, and crude protein also showed better grain quality than for grain stored in open containers, when considered for food or seed use.

Thomas, J. C. (1987). *Assessment of participation levels in FFA contests in District Five.* Master of Science thesis, Southern Illinois University, Carbondale.

The purpose of this study was to determine methods or activities used by vocational agriculture teachers to prepare students for FFA contests.

Based on the results, the researcher concluded: (1) The average number of class periods spent for each FFA contest by each teacher were as follows: Land Use (8.84), Livestock Judging (8.37), Parliamentary Procedure (5.35), Public Speaking (1.99), Farm Management (7.01), and Grain Show (1.92). (2) The contests attended by the FFA chapters were Parliamentary Procedure, Livestock Judging, Public Speaking, Land Use, Farm Management, Grain Show, Tractor Driving, Horse Judging, and Agricultural Mechanics. (3) Teaching methods and procedures for the preparation of contests varied by contests. The amount of class time devoted to each method also varied.

University of Illinois, Urbana-Champaign

Law, D. A., & Smith, J. E. (1987). *Vocational education service — A model system for continuous dissemination of technical teaching aids and delivering inservice education, phase III.* (Staff Study funded by Illinois State Board of Education, Department of Adult, Vocational and Technical Education). Urbana-Champaign: University of Illinois.

The primary purpose of the study was to develop a model format for creating instructional materials that would merge the competency based training approach and the problem-solving educational approach to teaching vocational education. Task lists, task analyses, and various sources of background information were used to develop the model. Several formats were developed and reviewed by a panel of experts. The final model consists of two major parts: a student manual and a teacher's manual.

The student manual consists of the following components: title page, acknowledgment page, table of contents, purpose statement, performance objective, technical information, related knowledge, graphics, student activities, additional activities, glossary, and reference list. The teacher's manual consists of checklists, an evaluation instrument, answer keys, and teacher references.

For teachers and students to more readily identify the relationships between vocational education and general or basic education, the following concepts are identified in the margins: communications, decision-making skills, employability skills, prerequisite knowledge, mathematics, problem-solving skills, and science.

A videotape and accompanying written guide were also developed and disseminated. These describe a step-by-step procedure that can be followed in order to produce instructional materials in the designated format. These materials are being referred to as **Education for Employment Modules**. They are currently being developed in agriculture, business, health, home economics, and industrial occupations.

Osborne, E. W. (1987). *SOE programs in Illinois — A status study.* (Staff Study). Urbana-Champaign: University of Illinois.

The purpose of this study was to describe the current status of SOE programs in Illinois and examine teacher attitudes and philosophies toward supervised occupational experience. A simple random sample of 100 Illinois agricultural production teachers was selected to receive a mail questionnaire (N = 320). The instrument, developed by the researcher, was field-tested and pilot tested. The instrument was determined to have content validity, and a Cronbach's Alpha reliability coefficient of $r = .89$ was calculated for the 27-item teacher philosophy scale. Respondents were asked to describe their attitudes toward the SOE concept and the nature of SOE programs conducted by their students. A 79% response rate was obtained.

On the average, teachers reported that 44% of their students lived in a city or town, 23% lived in a rural area but not on a farm, and 33% lived on a farm. Nearly 40% of the agricultural production teachers in Illinois did not require their students to conduct SOE programs. For those teachers that did require SOE programs, 36.8% required ownership or placement projects, and approximately one-half required improvement projects or supplementary skills.

Teachers were found to be very supportive of the SOE concept and indicated that SOE is a valuable component of vocational agriculture today. School facilities for conducting SOE programs were viewed as inadequate. Teachers also felt that their SOE knowledge base needed improvement. As the percentage of students living in town increased, teachers' SOE philosophy scores tended to decrease ($r = -.26$, $p < .05$). Teachers with twelve-month contracts were found to have significantly higher SOE philosophy scores when compared to teachers with nine-month contracts.

Pearson, S. L. (1987). *An analysis of the Illinois commercial and public pesticide applicator and operator certification training program.* Doctoral dissertation, University of Illinois, Urbana-Champaign.

Pesticide training programs for commercial and public applicators and operators have been conducted in Illinois by agricultural specialists of the University of Illinois Cooperative Extension Service since 1966. The purpose of the educational programs is to provide applicators and operators with

information regarding the proper use of pesticides and thus avoid misuse and accidents.

This study concluded that the respondents have a wide range in years of experience and age. There are subtle educational differences between categories of respondents, but as a group they are well educated and potentially capable of assimilating a relatively high level of information. The use of temporary employees is extensive in several of the categories, but the majority of employers using temporary people felt they did not need formal pesticide training. A major concern of most Cooperative Extension Service programs is funding. The respondents were not receptive to the notion of charging registration and publication fees. The respondents did, however, indicate the extension publications were helpful in the pesticide training sessions. Even though they do not like to pay for them, respondents still felt the publications were an asset. A majority of the respondents felt the intent of the current pesticide training programs is to provide information that will aid them in passing the certification examination required for licensing. The respondents were positive towards a change from the current lecture method of presenting the material to a hands-on approach for pesticide training.

Roegge, C. A. (1987). *Effects of biological principles integration on achievement and attitudes of secondary agriculture students.* Doctoral dissertation, University of Illinois, Urbana-Champaign.

The primary purpose of this study was to determine how well instruction in agriculture and in biology could be integrated in a high school agriculture setting. This purpose was accomplished by testing the effect of the incorporation of biological principles instruction into a problem area in vocational agriculture on student achievement in agriculture and in applied biology. The effect of this incorporation on student attitudes was also measured.

The population for this study consisted of all students in production vocational agriculture programs in Illinois. One hundred and four students from nine schools comprised the sample, 47 in the treatment group and 57 in the control group. Since random assignment of students to treatment groups was impossible, a quasi-experimental design was used. Treatments were randomly assigned to classes. A pretest was administered prior to the beginning of instruction, and posttest and student attitude instruments were administered immediately after the instruction was completed. Pretest scores were used as covariate measures to control for possible pretreatment group achievement differences. Data were analyzed by means of analysis of variance and covariance, t-tests, correlational and descriptive statistics.

Findings were (1) a significant difference in overall achievement between students taught using the integrated approach and those taught using the traditional approach ($p < .01$); (2) a significant difference in applied biology achievement between the two groups ($p < .01$); (3) significant relationships between student achievement and background ($r = .49$), previous biology experience ($r = .43$) and post graduation plans ($r = .30$); (4) significant differences in overall achievement between students from farm, rural nonfarm, and urban backgrounds ($p < .01$); (5) a significant difference in attitude toward

the curricular plan used between students taught using the integrated approach and those taught using the traditional approach ($p < .001$); (6) a significant difference in student attitude toward agriculture between students taught using the integrated approach and those taught using the traditional approach ($p < .05$).

Smith, J. E., & Russell, E. B. (1987). *Status and possible future directions for secondary school vocational agriculture in Illinois.* (Report). Springfield: Illinois Joint Staff on Agricultural Education.

The purpose of the study was to gather data from Illinois vocational agriculture teachers for use by the Illinois Leadership Council on Agricultural Education in the 1987 legislative effort to increase funding for agricultural education.

Data were collected by the Illinois Association of Vocational Agriculture Teachers (IAVAT) by mailed questionnaires sent to teachers in 359 programs of vocational agriculture. A 57% response rate was obtained after several follow-up efforts by IAVAT. Statistical analyses were conducted by Professor James Legacy of Southern Illinois University, a member of the study committee.

Major findings included (1) over 40% of vocational agriculture graduates go on to some type of postsecondary education, and nearly one-fourth choose studies in agriculture; (2) the value of net income from students' SOEP's equalled about $5 million; (3) nearly 40% of the teachers reporting had no advisory council of any kind; (4) about 80% of the teachers have some type of extended contract; (5) program outcomes expected by 88% of the teachers included preparing students for employment and further education; (6) use of microcomputers by one-third of the teachers was reported as an example of innovative, unique, or "high tech" teaching; and (7) teachers from all sections of the state reported "success stories," many of which appeared transportable to other schools.

Recommendations for policy and program changes were made to the Illinois Leadership Council on Agricultural Education.

Wolf, R. E. (1987). *Characteristics of state young farmer associations.* Master's equivalency study, University of Illinois, Urbana-Champaign.

The purpose of this study was to determine the program characteristics of state young farmer educational associations in each of the 25 states affiliated with the National Young Farmer Educational Association. This census study utilized a mail questionnaire for data collection, which was sent to state young farmer executive secretaries. Analysis of pilot test data yielded a .86 internal consistency reliability coefficient. A final response rate of 84% was obtained.

Eighty-one percent of the state executive secretaries reported that they did not have a fixed or specified amount of their position for working with the young farmer program. The most important young farmer responsibilities reported by executive secretaries included planning and coordinating young farmer activities and attending state young farmer functions. Only one-third of the state executive secretaries became involved in evaluating local young

farmer programs. Most respondents reported no age or membership restrictions for the young farmer association in their states. In only one of ten states were state funds reportedly used to support the operation of the young farmer program. State funds rarely were used to pay teaching stipends to local young farmer chapter advisors.

Executive secretaries indicated that the young farmer program is important to them, has great potential, holds a high priority in their jobs, and fulfills the educational needs and interests of its current target audience. In general, state executive secretaries believed that vocational agriculture teachers lack sufficient information, interest, commitment, and time to organize and maintain local young farmer chapters.

INDIANA

Wassmer, M. A. (1988). *Attitudes of guidance counselors concerning vocational agriculture in the public secondary schools of Indiana.* Master of Science in Education thesis, Purdue University, West Lafayette.

The purpose of this study was to investigate and determine the attitudes of guidance counselors regarding vocational agriculture in the public secondary schools of Indiana. Questionnaires received from 183 head guidance counselors which had a functioning vocational agriculture program as of January 1988 were analyzed in this study.

The data indicated that counselors generally had a positive attitude towards the vocational agriculture teacher(s) in the high school where the counselors were employed. Counselors tended to have positive and favorable attitudes toward the primary goals and objectives of vocational agriculture. Results of the study indicate that counselors held a somewhat positive attitude toward the vocational agriculture program being offered in their high schools.

A significant relationship, at the .05 level, was found between counselors' attitudes toward vocational agriculture programs and the number of years counselors had been enrolled in a vocational agriculture program as high school students.

Wright, M. R. (1988). *The effects of reflective teaching on students' ability to think critically about the role of teaching.* Master of Science in Education thesis, Purdue University, West Lafayette.

The purpose of this study was to determine the effects of reflective teaching on students' ability to think critically about the role of teaching. For the purpose of this study, critical thinking was defined as the assessment of statements based upon the appropriate criteria. The study was designed to test the following hypotheses: There will be no differences between the scores of students participating in reflective teaching and students in the control group on a posttest that measures student perceptions of (1) most important dimension of teaching, (2) least important dimension of teaching, (3) most beneficial area in improving teaching, (4) least beneficial area in improving teaching, (5) characteristics of an ideal teacher, and (6) how they will feel as full-time teachers.

The subjects for this study were 200 undergraduate students enrolled in Introduction to Elementary/Secondary Education (Education 249B) at Purdue University during fall semester, 1987. The treatment group was composed of the students who participated in reflective teaching. A nonequivalent control-group design was used.

The major dependent variables were scores on the posttests. All six hypotheses were measured both as pretests and posttests. Chi square and analysis of covariance were used to analyze the data. The findings revealed that for all the hypotheses there were no statistically significant differences in the posttest scores of the students participating in reflective teaching and those in the control group.

It was concluded that reflective teaching did not have a significant effect on students' ability to think critically about the role of teaching nor did the regular activities of the students in the control group. Although reflective teaching did not have a significant effect, it was equal to other activities engaged in by the control group.

IOWA

Anderson, J. A. (1988). *Knowledge of the AppleWorks program in Iowa high school vocational agriculture students.* Master of Science thesis, Iowa State University, Ames.

The purpose of this study was to determine the junior and senior vocational agriculture students' knowledge of the AppleWorks program. Students (366) in a random sample of 40 Iowa high schools that had vocational agriculture programs participated in the study. The instrument used to collect the needed data was a multiple choice, computer-scored test that consisted of 10 demographic questions and 45 content area questions.

Seventy-five percent of the students had used the AppleWorks program. Students indicated using the word processing file in the agricultural classes more than any other computer file, with the spreadsheet file being used the least. Students who had used the AppleWorks program scored significantly higher on the basic questions, spreadsheet questions, and overall test score. Those students who had taken at least one or two semesters of computer study scored significantly higher on all sections of the test than did those who had not studied computers. Students who used computers in a combination of classes had mean scores significantly higher in all areas of the test.

Burton, L. D. (1987). *A comparison of vocational agricultural teacher behaviors and characteristics.* Doctoral dissertation, Iowa State University, Ames.

The purpose of this study was to assess teaching behaviors and demographic variables associated with teachers and learning. The population studied consisted of 10,200 secondary vocational agriculture teachers in the United States. A stratified random sampling procedure was used in conjunction with an oversampling technique combined with a substitution procedure. The sample size was 494 teachers.

Two distinct groups of teachers were identified by using composite scores from teacher responses to the forty statements on teaching activities. These two teacher groups were used in making comparisons between the demographic variables.

Effective teachers tended to teach more secondary and adult students and had been in their present schools longer than had less effective teachers. They were older teachers and were inclined to join more professional and community organizations. They were more frequently found in higher levels of leadership within organizations. They were more frequently appointed to government commissions than were less effective teachers, and they relied heavily on university-related personnel and services for technical information. Other information sources that were most frequently named included local professionals, media, supervisory personnel, and other vocational agriculture teachers.

Eastman, K. A. (1988). *Mentoring and career development of university agricultural education faculty In the United States.* Doctoral dissertation, Iowa State University, Ames.

The purpose of this study was to determine the extent to which the professional careers of university agricultural education faculty have been influenced by mentors and to examine the relationship between mentoring and professional career development. Data were obtained through a mailed questionnaire from 237 university agricultural education faculty members from throughout the United States.

Most agricultural education professors (92.06%) perceived their professional careers to have been significantly influenced by one or more people who were referred to as mentors in this study. The most important functions of mentors of university agricultural education faculty were: influenced my career in a positive way, supported my efforts to advance in my career, took a personal interest in the development of my career, expressed pride in my success, and recognized my potential as an effective educator.

Composite mentoring scores were generated for each individual based on responses to the mentoring function items. Respondents were grouped by extent of mentoring influence experienced, with 10.58% having experienced high levels of mentoring influence, 61.38% experienced moderate levels of mentoring influence, and 20.10% experienced low levels of mentoring influence on their professional career development. The remaining 7.94% had experienced no mentoring.

Respondents' composite mentoring scores were correlated with their performance on selected indicators of career development, and significant relationships were observed between mentoring and the following variables: number of master's students advised, grants received, satisfaction with one's current position, and satisfaction with one's career progress. No significant relationships were observed between mentoring and the following variables: years to move from assistant to associate professor, years to move from associate to full professor, administrative positions held, national leadership positions held, national awards received, professional awards received at the state or local level, articles published, and doctoral students advised.

Ejembi, E. P. (1988). *Perceptions of agriculture in Nigeria by students of the Division of Agricultural Colleges, Ahmadu Bello University.* Doctoral dissertation, Iowa State University, Ames.

The purpose of the study was to determine perceptions of agriculture in Nigeria by students of the Division of Agricultural Colleges, Ahmadu Bello University. The study population consisted of 1,434 students at the four colleges of agriculture administered by the Division of Agricultural Colleges. Both proportional and simple random sampling were used to select participants for the study. A total of 234 students participated in the study.

Respondents were between 18 and 43 years of age; the mean was 25 years. More than 47% were ordinary diploma students, whereas over 52% were high diploma students. Over 75% of the respondents were males and just under 25% were females. Occupational prestige ranking by students indicated that 1)

being a medical doctor was the most prestigious occupation and storekeeping was rated least prestigious; 2) farming was slightly above average in prestige; 3) no significant difference existed between males and females in their perceptions of occupational prestige, except for accountant and storekeeper.

A desire to help develop Nigerian agriculture was the most important factor in the students' decision to study agriculture; family factors influenced students the least. First-year ordinary diploma students were influenced more by economic, family, and personal factors than first-year higher diploma students. The perception of agriculture as the basis for national development had the highest degree of agreement, but that agriculture is fit for illiterates had the lowest degree of agreement.

Goeken, R. N. (1988). *Comparison of students entering the College of Agriculture at Iowa State University during fall 1985 and 1987.* Master of Science thesis, Iowa State University, Ames.

The primary purpose of this study was to develop a profile of students entering the College of Agriculture at Iowa State University during the 1987 fall semester and to compare them to those students who entered the college in the fall of 1985. Entering students completed questionnaires as a part of their orientation classes. Usable results were gathered from 89% of the new students.

Findings of the study included: (1) the percentage of female students increased; (2) nearly two-thirds of the students were from farms and acreages; (3) over half of the students graduated in the top 20% of their high school classes; (4) about 45% of the students took vocational agriculture if they had the opportunity; (5) parents and vocational agriculture instructors had the greatest influence on students' selection of Iowa State and selection of their majors; (6) entering students in 1987 had a more positive outlook toward opportunities in agriculture and fewer felt that their families had been adversely affected by the agricultural recession than did students who entered in 1985; (7) the profile of entering students when grouped by the number of credits in mathematics, physical sciences, and biological sciences required in their respective curricula differed significantly on several factors including home residence, participation in school and community activities, factors influencing curriculum choice, and attitudes towards agriculture.

Martin, R. A. (1988a). *Attitudes and perceptions regarding adult education programs in Iowa.* (Staff Study). Ames: Iowa State University.

The main purpose of the study was to identify the attitudes and perceptions of young farmers, agribusiness persons, vocational agriculture teachers, postsecondary agricultural instructors and agricultural extension professionals regarding adult agricultural education programs in Iowa.

Additionally, the study was conducted to assess the current status of adult agricultural education programs and to identify future program development needs. Data were collected by self-administered questionnaires sent to a randomly selected group of agricultural professionals as indicated. Fifty participants were selected for each of the five agricultural professional

categories. The return rate for the questionnaire was 54%.

The major findings of this study indicate that adult education programs should focus on technical and practical knowledge and skills to solve real problems. The respondent groups agreed that participants need to be involved in planning and evaluation of programs. They also indicated that adult education in
agriculture should emphasize that agriculture is more than farming. Extension professionals indicated that adult agricultural programs should be provided primarily by the extension service and state universities. Vocational agriculture teachers and postsecondary instructors indicated that adult agricultural education should be provided primarily by community colleges/area vocational schools. Overall, the respondent groups agreed that adult agricultural education is a worthwhile program and is important to them. They disagreed with the statement that "adult agricultural education in Iowa has a poor image."

Martin, R. A. (1988b). *Perceptions regarding instructional methods used in adult agricultural education programs.* (Staff Study). Ames: Iowa State University.

The purpose of this study was to identify the current methods of delivering agriculturally related educational programs to adults as perceived by agricultural extension professionals and postsecondary agricultural instructors in Iowa.

The specific objectives of the study were as follows: to identify methods, procedures, and educational tools used and their frequency of use in delivering adult educational programs in agriculture; to determine the level of agreement of the respondent groups regarding selected statements on methods, procedures, and educational tools used in adult educational programs in agriculture; and to determine the perceived effectiveness of the methods of instruction used by adult educators in agriculture.

The study was designed to collect descriptive data to identify the current appropriate methods of delivery for educational programs for adults involved in agriculture. The study focused on postsecondary agricultural education programs and extension education programs. The population of the study consisted of the 100 postsecondary agricultural instructors employed at the community colleges in the state of Iowa and the 100 state specialists and administrative staff of the Iowa Cooperative Extension System. Data were collected by self-administered mailed questionnaires, sent to a randomly selected group of agricultural extension professionals and postsecondary agriculture instructors in Iowa.

The results of this study suggest that postsecondary agricultural instructors and extension professionals believe that competence in various instructional methods for adults is necessary to effectively deliver and transfer technology in agriculture. However, many of these agricultural educators indicated they do not feel fully equipped to use all of the technologies and strategies even though they may believe them to be effective. Information from agricultural educators at the postsecondary and extension professional levels indicates and supports the general need as evidenced by the literature for enhancing the use of appropriate and effective instructional methods and tools in conducting adult education programs in agriculture.

Nilvises, P. (1988). *The role of agricultural leaders in farmer associations and the implications to agricultural extension education in Thailand.* Doctoral dissertation, Iowa State University, Ames.

The purpose of the study was to describe the role of leadership and the need for leadership training of leaders in Farmer Associations in transferring new technologies to farmers in Thailand. The study identified demographic characteristics of Farmer Association leaders, the leadership activities performed, the perceptions held regarding selected leadership concepts, and the need for leadership training. In addition, the study compared leadership variables to selected demographic data.

The study population consisted of 510 leaders of Farmer Associations in Thailand. A cluster-random sampling method was used to select a total of 125 participants. A three-part questionnaire was developed and used to collect the data. Descriptive and inferential statistical procedures were used to analyze the data. Major findings of this study indicated that for groups to be effective leaders must be willing to share power and prestige with other group members. Respondents indicated a need for training regarding techniques to establish rapport with government officials and other organizations and agencies. Respondents in higher placed leadership positions indicated more activities, stronger perceptions regarding leadership, and a greater perceived need for leadership training for themselves as well as the group. The study indicated a need for Farmer Association leaders to work closely with extension professionals in transferring new technologies.

Ning, H. (1988). *Comparisons of group techniques in decision-making.* Master of Science thesis, Iowa State University, Ames.

The primary purpose of this study was to compare the effectiveness of three group decision-making techniques, namely a conventional approach, nominal group technique, and consensus. Participants were randomly assigned to treatment groups in three sites. Groups were given specific steps to follow in reaching their group's decisions. Comparisons among groups were made based on decision scores and group members' attitudes toward the process used.

Findings of the study included: (1) participants using the consensus approach were more satisified than those using the conventional approach with the procedures followed, including their freedom to express ideas, the mechanics of the decision-making process, leadership exerted, and sense of accomplishment; and (2) no significant differences were found in decision scores between the three techniques.

Odubiyi, A. 0. (1987). *Perceptions of Iowa vocational agriculture teachers regarding teaching methods used in agricultural education.* Master of Science thesis, Iowa State University, Ames.

The purpose of the study was to seek perceptions of practicing vocational agriculture teachers in the state of Iowa regarding the various teaching methods used in their day-to-day instructional activities. Specifically, the study sought

to determine the extent to which various teaching methods, tools, and techniques were used and were considered effective and compare these findings with selected teacher characteristics. A self-administered mail questionnaire was used to collect the data for this study. The questionnaire consisted of four sections: concepts on teaching-learning; use and effectiveness of selected methods/tools; general comments; and biographical information. The population of the study included all 268 Iowa vocational agriculture teachers.

The questionnaire was mailed to 150 teachers. One hundred thirteen teachers responded (75% return) and 109 questionnaires were complete and usable.

The data were analyzed using frequencies and percentages, means and standard deviations, and one-way analysis of variance. The .05 level of significance was set as the critical value for all analyses.

Although teachers in this study agreed that ideally a variety of instructional strategies/tools should be used, they, as a whole, seemed to cling to a few methods and tools when asked to indicate the methods/tools most used. The most used methods were not necessarily rated the most effective, at least not in the same rank order.

While the results of this study and the review of the literature indicated a need to emphasize the use of a variety of teaching methods in vocational agriculture, there may be a more subtle message to this investigation. Perhaps educators should focus on using what are termed traditional methods (lecture, discussion, etc.) in more effective ways. The quality use of these methods may contribute as much to improving learning as an equal emphasis on the use of a variety of teaching methods.

Rollins, T. J. (1987). *Level of critical thinking of Iowa secondary agriculture students.* Doctoral dissertation, Iowa State University, Ames.

The central purpose of this study was to determine the ability of Iowa agriculture students to use critical thinking skills. Cluster sampling was utilized to identify the sample for the study. A total of 668 agriculture students from 18 Iowa secondary schools served as the sample.

Major findings of the study were (1) Critical thinking mean scores of Iowa secondary agriculture students was lower than the mean scores measured in the two norm-referenced groups; (2) two subtests of the Iowa Tests of Educational Development proved to be the two greatest predictors of levels of critical thinking.

Schumacher, L. G. (1987). *Attitudes and perceptions of selected educators, administrators and legislators toward agriculture.* Doctoral dissertation, Iowa State University, Ames.

The purpose of the investigation was to determine the attitudes and perceptions of selected Iowa educators, administrators and legislators toward agriculture. A survey instrument was mailed to teachers, school board presidents, school administrators, and state legislators. Simple random sampling and stratified random sampling were employed for the investigation.

Respondents were most knowledgeable about the usage of agricultural chemicals and agricultural mechanization in Iowa. The respondents were observed to be less knowledgeable about agriculture as a way of life, current agricultural economic conditions, and new agricultural technology. Legislators were more knowledgeable about agricultural economic conditions.

Vold, L. D. (1988). *Identification of the role of the biosciences in the study of agriculture in Iowa.* Master of Science thesis, Iowa State University, Ames.

The overall purpose of this study was to identify the perceptions held by teachers of agriculture in Iowa regarding the infusion of the biosciences into the study of agriculture. Additionally, the purpose of the study was to lay some groundwork for future research and instructional materials development in the area of biotechnology. Since biotechnology has stirred a great deal of interest throughout all levels of education, it was considered appropriate to begin any new reform and/or advancement by first describing what already existed and then establishing priorities for potential curriculum changes. This study was an attempt to define existing strengths and weaknesses in agricultural science knowledge and skill areas within exisiting programs. It also sought to measure the degree of acceptance on the part of the teachers that could be expected as further efforts are implemented to infuse the biosciences into vocational agriculture programs in Iowa.

A self-administered mail questionnaire was used to collect data in this study. The questionnaire consisted of 125 student knowledge and skill statements. Ninety vocational agriculture teachers were randomly selected from a population of 268 teachers of agriculture in Iowa. Seventy-two percent of the questionnaires were returned. The results of this study indicated that teachers moderately to highly agreed that the biosciences should be infused into the study of agriculture. The most highly rated knowledge and skills statements related to soil science, genetics, plant science and animal science. Teachers placed a high importance on the need for practical applications of science in agriculture. Teachers were less supportive of study related to food science and microbiology. The teachers with the greater level of experience tended to be less receptive to the infusion of the biosciences into the study of agriculture. Teachers indicated a need for increased laboratory experiences to enhance the sciences in agriculture.

Weeks, H. P. (1987). *Perceptions of selected educators of the quality of instruction in secondary vocational agriculture programs.* Doctoral dissertation, Iowa State University, Ames.

The purpose of this study was to assess the perceptions held by selected educators of the quality of secondary vocational agriculture programs and instruction in Iowa. The population consisted of agriculture teachers, counselors, superintendents, and principals from all secondary schools in Iowa which had vocational agriculture as a component of their curricula (249). A modified stratified random sampling technique was employed to obtain paired and nonpaired responses from the population.

Internal consistency and reliability of the data collection instrument was determined to be .977. Significant differences were observed in all program areas studied between agriculture teachers and the other three groups studied. Agriculture teachers' perceptions displayed a significant difference in all but two individual items in the area of agricultural instruction. Agriculture teacher mean scores were much higher than the other groups in the study. Level of educational achievement had a positive influence on perceptions of programs and instruction.

Henry, C. F. (1988). *Relationships between agricultural supplies and services competencies performed by agribusiness employees in chemical, seed, feed, fertilizer, and grain enterprises versus those taught in the vocational agriculture programs in public high schools of selected Maryland counties.* Master of Science thesis, University of Maryland, College Park.

The primary purpose of this study was to determine the selected agricultural competencies used by agricultural supplies and services employees in selected Maryland counties. The population used in the study consisted of 66 agribusinesses and 38 vocational agriculture teachers in the selected Maryland counties.

A packet of materials was sent to the agribusiness managers and the agriculture teachers. The materials included a cover letter, a questionnaire listing 64 skills, and a stamped, self-addressed return envelope.

A Likert Scale was used to rate each skill where 4=essential, 3=important, 2=of some importance, and 1=not important. Means were computed for each skill within each group of respondents to determine the importance of each skill. Means were also used to determine if each skill was used by agri-business employees or taught in agriculture programs. An independent T-test was used to determine if there was a significant difference between the means of respondent groups pertaining to each skill.

Agriculture teachers consistently rated competencies as being more important than did agribusiness managers. Twenty-four, or 39%, of the agribusiness competencies were identified as being used by agribusiness employees as perceived by agribusiness managers. Twenty competencies were observed to have a significant difference t (71) - 1.994, p. .05., between the perceived importance of competencies rated by agribusiness managers and agriculture teachers.

The most important skills used by agribusiness employees are personal skills. Agriculture teachers are teaching more competencies than are used by agribusiness employees.

Lawson, O. J. (1988). *An assessment of inservice training needs and delivery methods for agriculture teachers in Maryland.* Doctoral dissertation, University of Maryland, College Park.

The purpose of this study was to identify important competencies, inservice training needs and preferred delivery methods as perceived by agriculture/agribusiness teachers in Maryland. This was accomplished by examining the perceptions of secondary and postsecondary agriculture teachers regarding the importance of selected competencies, inservice training needs and preferred delivery methods for inservice within each area of competency.

A mail questionnaire with 159 competency items and certain demographics was used to survey all 75 secondary and 22 postsecondary agriculture teachers with a response rate of 97% and 95% respectively. The reliability coefficients of the instrument ranged from 0.91 to 0.93 Cronbach alpha. Data were analyzed by using descriptive statistics, cross tabulations and

Kendall tau correlation coefficients.

The major findings of the study were as follows: (1) Of the 159 competencies, secondary agriculture teachers perceived 132 (83%) as important and indicated need for inservice in 22 items (14%) with highest inservice need in three competencies: recruit students for agriculture/agribusiness programs, teach with the aid of a computer, and identify sources of new technical developments in agriculture. (2) Postsecondary teachers rated 56 (62%) of the 159 competencies as important and indicated need for inservice in eight items (5%) with highest inservice need in four competencies: identify sources of new technical developments in agriculture, motivate students, teach with the aid of a computer, and evaluate instructional effectiveness. (3) Secondary agriculture teachers significantly (p 0.05) preferred the inservice workshop delivery method for curriculum and instruction, horticulture, leadership and FFA, while postsecondary teachers preferred the in-depth technical workshop method for curriculum and instruction inservice.

A priority need to provide secondary agriculture teachers with strategies on how to recruit students for agriculture/agribusiness programs and update postsecondary teachers with new technical developments in agriculture was recommended.

Lippin, L. B. (1988). *A study of personality types of inmates at the Maryland Correctional Institution for Women.* Doctoral dissertation, University of Maryland, College Park.

This study surveyed the personality types of inmates in a state prison for women as measured by the Myers-Briggs Type Indicator (MBTI). The purpose of the study was to increase understanding of female inmates and to provide practical data for use in prison programs.

The MBTI was administered to 100 randomly selected inmates and demographic and prison data were gathered from their files. The research subjects participated in feedback workshops to learn personality type concepts and to validate their MBTI results. The personality type distribution of inmates was compared with the personality types of unincarcerated women, and relationships between personality type and race, age, education, crime committed, and number and type of infractions committed were examined.

Several significant relationships were found. Introverts were significantly overrepresented in all comparisons of the sample with norming groups. For subjects with less than high school education or equivalence, ISTPs were found to be significantly overrepresented.

A significant relationship was found between race and type of white inmates more likely to be sensing and perceiving (SP) or intuitive and feeling (NF) and black inmates more likely to be introverted and sensing (IS). In the 23 years of age or younger group, ESFJs were significantly overrepresented.

ISTPs were significantly overrepresented as were thinking types in the subsample of inmates who had committed more than three infractions.

A qualitative aspect of the study reports inmates' responses to learning about their personality types and their application of type understanding to the incarceration experience.

The study's findings suggest practical value of the MBTI to prison

administrators as a classification aid and for needs assessment and program planning. Personality type workshops for both inmates and staff are recommended to improve relations within the prison community. More research is needed on the personality types of inmates, with particular attention to race and gender, to assess distribution trends found in this study.

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MASSACHUSETTS

Hopson, D. B. (1988). *Comparison of Connecticut vocational agriculture programs: successful practices and their evaluation.* Doctoral dissertation, University of Massachusetts, Amherst.

The purpose of this study was to identify successful practices used in vocational agriculture programs nationwide and to determine their importance and frequency of use within Connecticut. The study was completed using two surveys. Survey I was sent to FFA executive secretaries and to state consultants and teacher educators in agricultural education. Survey I asked these participants to identify the two most important practices in each of 66 categories which they felt were most important to the success of a vocational agriculture program. These participants were drawn from throughout the United States to avoid regional bias. The three most frequently occurring practices under each category from Survey I became the variables for Survey II. Survey II was sent to present and graduated vocational agriculture students, their parents, vocational agricultural teachers and consulting committee members, and administrators and community members involved in agriculture. Survey II asked each participant to assign an importance rank and a frequency of use rank to each of the 66 variables. The data from both surveys were analyzed for the number of times a practice was named and by the groupings that seemed to be apparent from the survey results. Survey II data were analyzed statistically with a rank ordering of practices by importance based upon group means.

The study concluded that many of the practices identified and deemed important by program participants were not being used in program evaluation. These practices, used at either the state or local level, could improve educational delivery and enable the program to closely relate to the needs of the community. Major recommendations included (1) exploring the discrepancy between frequency of use and overall item rank, (2) developing a means of implementing appropriate evaluative criteria for each practice, and (3) investigating differences between group rankings on practices for which this difference was significant.

MICHIGAN

Heinze, K. L. (1988). *Yeomanry transformed: The changing image of the American farmer in the northern agricultural press, 1873–93.* Doctoral dissertation, Michigan State University, East Lansing.

From the emergence of a distinctly agricultural press in 1810 until well after the Civil War, farm newspaper editors and their readers shared a mythic conception of the American farmer. For over half a century, the pages of the northern agricultural press depicted the farmer as the noble yeoman--the central hero of the agrarian myth. Not only was the farmer the ideal man and citizen, he was also the symbol of American democratic government. Between the Panic of 1873 and the Panic of 1893, the heroic yeoman image underwent a profound transformation. Throughout these tumultuous two decades of agrarian unrest, northern agricultural editors and their readers began strongly supporting collective political and economic action while denouncing monopoly and privilege. Instead of the traditional and ubiquitous poems, speeches, and editorials apotheosizing the proud, virtuous, and independent yeoman, the farm papers resounded with strident calls for cooperative economic and political action. The mythical yeoman image gave way to the farmer-businessman and political activist. This new image revealed an agrarian willingness to face the social and technological challenges of industrialization, urbanization, and commercialization.

At the same time, however, the late nineteenth century agricultural press revealed an ominous dimension of the agrarian character. Editorials and letters reflected an increasingly ardent xenophobia in the wake of large-scale immigration. Nativism, coupled with the unprecedented hostility toward Native Americans and Blacks occurring during the period, revealed a bitter, cynical, retrogressive farmer quite unlike either the yeoman or the progressive farmer-activists.

By the end of the nineteenth century, the legendary yeoman was displaced by a new, more complicated agrarian—one who was moving technologically, economically, and politically forward, but who could not seem to reconcile many of the social changes ushered in by industrialization and a growing cultural pluralism. The result was an image of the American farmer that was, at best, paradoxical, and at worst, schizophrenic. It is an image of a conflict between agrarian progressivism and retrogression which remained unresolved in the rural psyche well into the twentieth century.

Quiroz, C. M. (1987). *The self-directed learning process in a selected group of adult farmers in Michigan.* Doctoral dissertation, Michigan State University, East Lansing.

The purpose of this study was to enhance the understanding of the self-directed learning process as a basis for improving extension education programs. The respondents were 17 adult farmers selected from a population of organic farmers in Michigan. Data were collected through open-ended interviews and analyzed through use of the multiple comparative method, a method consistent

with the grounded theory approach as described by Glaser and Strauss.

The findings resulted in several major conclusions as follows: First, these learners represented a relatively young and highly educated group of farmers, the majority of whom were men who had worked in organic farming for at least five years and were working as part-time farmers. Second, they were self-directed learners. Third, their major and preferred method of learning was self-directed. Fourth, they did not learn in isolation. Fifth, learning from experience was perceived as the most important learning method, but not necessarily the most efficient in terms of money and time. Finally, several problems and challenges were identified including lack of time (selftime) for learning on their own. Finding information was not considered a problem; the problem perceived was "where to find the best the fastest" information and how to relate that information to their own problems.

Suvedi M. P., & Wamhoff, C. H. (1988). *Perceptions of agricultural teachers about the role of volunteers in strengthening secondary school agricultural education programs in Michigan.* (Staff Study). East Lansing: Michigan State University.

The primary purpose of this study was to find out the extent of volunteers' involvement in secondary school agricultural education programs in Michigan. The secondary purpose was to determine perceptions held by vocational agriculture teachers regarding the prospects of volunteers' involvement in strengthening different aspects of the agricultural education program. Data were collected by means of a mailed questionnaire. About three-fifths of the vocational agriculture teachers responded to the questionnaire. STATPACK software was used to analyze the data. The findings indicated that the majority of the vocational agriculture teachers are using volunteers, especially in advisory boards and committees. Many teachers indicated that they received assistance from volunteers while organizing field trips and conventions, promoting their programs, carrying out their instruction, and organizing leadership activities for the FFA. Teachers had positive perceptions toward volunteers' possible contribution to strengthen the secondary school agricultural education program. Major volunteer roles identified by the teachers were an advisor, resource provider, local support builder, a coach, and a program promoter.

Thorburn, T. L. (1987). *A study of actual and preferred learning activities and microcomputer usage in a selected group of Michigan farmers.* Doctoral dissertation, Michigan State University, East Lansing.

The purpose of this study was to explore the microcomputer related learning activities carried out by a selected number of farmers who have microcomputers and successfully use them in their farm businesses. The three research questions which guided the research area were as follows: What learning activities have farmers engaged in to acquire the knowledge and skills to use the microcomputer successfully in their farm businesses? What are the preferred learning activities of the study participants related to the microcomputer? What are the future learning needs of the study participants?

This descriptive study was based on data collected through a questionnaire and structured interviews with 12 selected farmers from two counties in Michigan. The researcher worked closely with the Cooperative Extension Service personnel in each county to identify the participants and then, after sending a questionnaire to each, conducted personal interviews with each farmer-participant at the farmer's home or farm office.

The study resulted in seven major conclusions. This group of farmers: (1) adopts new technologies shortly after the introduction and availability of the technology; (2) participated in a variety of learning experiences about microcomputers prior to the purchase of the technology; (3) looked to many different sources for training, information, and skill development in the use of the computer; (4) attended a variety of educational programs sponsored by many different organizations; (5) preferred hands-on training in microcomputers and self-directed learning at their farm and/or home in using the self-teaching and user manuals for learning while using the microcomputer; (6) desired future learning opportunities to achieve their goals for expanding the use of the microcomputer in their farm businesses; (7) expressed a desire for assistance from the Cooperative Extension Service in organizing microcomputer user groups for farmers.

Young, J. E., Jr. (1987). *A follow-up study of 1982–86 graduates from the dairy production program at the Institute of Agricultural Technology, Michigan State University.* Master of Science research report, Michigan State University, East Lansing.

The purpose of this study was to provide a basis for improving the program through an evaluation of the occupational performance and opinions of the graduates. The respondents were the entire population of graduates with known mailing addresses. The 44 usable returns represented a 70% response rate. The mailed questionnaire contained 21 questions, which were grouped into four areas: employment status, education status, selection of dairy production program, and educational satisfaction. The kinds of data collected included occupational and educational attainments, perceptions about the relevance of instruction to the subsequent occupations and education, reasons for enrolling in the dairy program, and suggestions for areas of study that needed additional emphasis.

The findings included the following: Most of the graduates were satisfied with the dairy production program whether they were employed full-time, part-time or not in the labor force. The graduates were influenced more by their parents than by anyone else when making the decision to enter the program. Overall, the graduates felt that the most important area that needed additional emphasis was computer skills.

MINNESOTA

Casey, M. A., Persons, E., & Wardlow, G. (1988). *Listening to nontraditional students: A study for the University of Minnesota College of Agriculture.* (Staff Study). St. Paul: University of Minnesota.

The purpose of the study was to gain insight into the opinions of current and potential nontraditional students about nontraditional education. The College of Agriculture at the University of Minnesota was interested in increasing enrollment of nontraditional students. In an effort to attract more students the college was considering scheduling and delivery system changes but before implementing changes college administrators sought input from students. Three focus group interviews were conducted with nontraditional students (students over 25 years old registered in the College of Agriculture). Another three focus groups were conducted with potential nontraditional students (Twin Cities area agribusiness employees). Approximately nine people participated per group. Although scheduling options and alternative delivery systems were important to nontraditional students, changing these without changing other features of the college would probably not draw large numbers of students. Four other factors would prompt students to enroll: service, experts, hot topics, and promotion. Service was crucial. Nontraditional students did not have the time or energy to struggle with bureaucracy. Yet the university was perceived by participants as inaccessible, uninviting, and bureaucratic. Nontraditional students wanted to hear from experts on hot topics. They believed experts had not only mastered the academic side of their fields but were skilled in applying their knowledge to practical situations. Hot topics could either be emerging or current issues, or information or skills that would help them perform better in their jobs. Potential students did not know what the college had to offer or how to get information. Traditional promotion techniques were not reaching these people.

Jaenicke, D. D. (1988). *Identifying and evaluating the delivery of educational services to farmers in Manitoba.* Master of Education thesis, University of Minnesota, St. Paul.

The purpose of this project was to find out ways in which farmers in Manitoba receive educational services and which services they find most useful. Interviews with farmers in Manitoba, Manitoba Agriculture representatives, and University of Manitoba professors were used to gather information. Literature that described and rated information sources for farmers was reviewed.

Farmers use radio, television, newspapers and periodicals, Manitoba Agriculture representatives, and computer networks. They rely heavily upon the printed media for direct information and the broadcast media for up-to-date market and farm related news.

Manitoba agriculture and its agriculture representatives were ranked high in farmer evaluations of quality. Farmers used the "Ag. Reps." to confirm information received from other sources. Demonstrations and field trips were rated as very important tasks of Ag. Reps. in Manitoba. The system of extension agriculture is different in Manitoba in that it does not involve the University

of Manitoba in many of its activities. Ag. Reps. are employed by Manitoba Agriculture, not the University of Manitoba. The University of Manitoba was rated poorly as an information provider. The lack of contact between the university and the local Ag. Reps. may be the reason for the poor rating.

Manitoba farmers apparently believe that the media will be their prime source of information in the future and rated the media high in their evaluations. They felt Manitoba Agriculture will take on a diminishing role as an information provider. "Grassroots" (a computerized information network) ranked low as a provider because it is not accessible to many farmers. Farmers felt they will continue to rely upon retailers to provide information on specific problems.

Peterson, B. D. (1988). *The first two years of mandatory farm credit mediation in Minnesota.* Master of Education thesis, University of Minnesota, St. Paul.

In 1986, the Minnesota Legislature passed legislation that mandates mediation of any agricultural debt of $5,000 or more that is in default before foreclosure can take place. In this study, the mediation process was analyzed, the role of the parties involved was discussed, and the impact on the parties was evaluated.

Mediation is one of several methods that can be used to resolve dispute. Mediation brings a neutral third party into a dispute to keep communications from breaking down. A mediator does not offer solutions, but inspires other parties to resolve problems through negotiation. In farm credit mediation in Minnesota, a mediator is used to help settle disputes between farm borrowers and agriculture lenders. A neutral agency, the Minnesota Extension Service, was designated by the legislature to coordinate the mediation activities and administer the program.

To creditors, mediation adds an extra step to the debt-servicing process. The current mediation law in Minnesota sunsets on June 30, 1989. Most farm organizations and farm advocacy groups favor the process. Study results indicated that the process is working. At the present time indications are that the law will be extended.

MISSISSIPPI

Deeds, J. P., Arrington, L. R., & Flowers, J. L. (1988). *Cooperating teacher attitudes regarding cooperating teachers and student experience expectations in vocationalagriculture in three states.* (Staff Study). Mississippi State: Mississippi State University, University of Florida, and North Carolina State University.

The student teaching experience plays an important role in teacher education programs and the quality of that experience is a concern. This study was conducted to determine cooperating teachers' attitudes toward student teaching expectations and opinions about the experiences which could provide a basis for inservice and possible program change.

The population of the study consisted of all vocational agriculture teachers in Mississippi, Florida, and North Carolina (N=92) who had served as cooperating teachers from 1983–1987 and were still teaching. The population was surveyed by the use of a mailed, researcher-developed instrument in the fall of 1987. Each of the three state subgroups was surveyed through the teacher education department in that state with an institutional cover letter, a mailed reminder, and telephone follow-up. The response rate was 89%. The instrument consisted of three parts: (1) agreement with university expectations, (2) opinions about procedures used, and (3) demographics.

Cooperating teachers tended to agree with many of the expectations of the university for the student teaching experience. Cooperating teachers agreed that adequate facilities, professional organizations, and professional dress for student and cooperating teachers were appropriate expectations. Program components, such as 12-month contracts and adult and alumni program expectations received less agreement. Written teaching plans, observation of the student teacher everyday, and providing instructional units ahead of time were lower rated expectations.

Cooperating teachers also believed that cooperating teacher training was of value, they should receive compensation (money and/or credit), and the student's final grade should be a joint responsibility of the cooperating teacher and the university supervisor. One in six of the cooperating teachers did not feel they fully understood the university expectations. University supervisors should reemphasize the importance of expectations and provide further justification for those expectations in question.

Deeds, J. P., & Frese, W. (1987). *Labor force experiences of persons trained in colleges of agriculture.* (USDA CSRS Project S-200). Mississippi State: Mississippi State University, Department of Agricultural and Extension Education and Rural Sociology.

In 1984, CSRS Regional Research Project S-200 was instituted to determine the labor force experiences of persons who had been trained in colleges of agriculture. The S-200 project provided a means to gather this information so it would be regional and more appropriate to the southern interdependent labor market. Mississippi State University (MSU) completed the project for MSU and Alcorn State University (ASU).

The specific objectives of the S-200 study were (1) to analyze the labor force

experience and continuing education of college graduates in agriculture, and (2) to determine the requirements for job performance in professional agricultural settings from the perspectives of the employees and their opinions concerning agricultural careers today.

The population for the study consisted of both respondents and nonrespondents from the 1977 CSRS S-114 study of undergraduates in Colleges in Agriculture in the South, and respondents from a parallel study of 1,862 institutions using the same original frame.

The survey was conducted by mail with three follow-up mailings. The instrument was developed by the members of the S-200 committee. The survey was sent to 488 subjects with a 56% response rate from MSU and 18% from ASU.

Data indicated that 168 respondents completed a bachelor's degree in agriculture. Respondents were generally positive about the preparation provided by their undergraduate agriculture curricula with the exception of practical work experience.

Respondents were ambiguous about the usefulness of their education in finding and working at their first jobs; however, most believed their agriculture majors were a wise choice. Respondents indicated skills needed most were in the areas of communication, planning, problem solving, and management. Knowledge needed most by respondents was in the areas of efficient agricultural production, agricultural economics and agricultural chemicals.

Most respondents held fairly positive opinions about agricultural careers, but were evenly split in their feelings about the decline of the agricultural industry.

Lawver, David Earl. (1988). *Predictors of professional participation by vocational educators.* Doctoral dissertation, Mississippi State University, Mississippi State.

The purpose of this study was to examine the predictors of professional participation by vocational educators. A random sample of 447 subjects was drawn from the national population of 12,782 vocational agriculture teachers.

Data were collected via mailed questionnaires. Three hundred sixteen returned the questionnaires, representing 70.6 percent of the population. A nonrespondent sample of 20 subjects was contacted by phone to ensure generalizability.

The instrument consisted of three parts: self-perceived importance of organizational role and member benefits (SIORMB), degree of professionalism (DP), and teacher characteristics (TC). The first two sections were adapted from previous research whereas the third section was researcher designed. Statistical analyses were conducted using multiple regression and discriminant analysis, $\underline{P} \leq .05$. Factor analysis was also used to identify factors on the SIORMB and DP scales between those who were members of four professional organizations and those who held no membership. When members of four professional organizations were compared to members of no professional organization, a Wilks' Lambda of .493 was achieved, $X^2(17, \underline{N} = 186) = 80.88$, $\underline{P} \leq .05$. Classification accuracy was 82.3%.

It was concluded that those who are "at risk" of not participating in professional organizations can be identified by using the set of predictors produced with discriminant analysis. The best predictor of membership was previous student membership in a professional organization. Those who hold

leadership positions in teacher organizations could use the predictors to target "at risk" persons for specialized recruiting.

Tanveer, Ahmad. (1988). *A decision making model for selecting small farm tractors with implications in extension education in Pakistan.* Master of Science thesis, Mississippi State University, Mississippi State.

The primary purpose of this study was to determine which farming system is most economical for small farm operators in Pakistan, when a small farm operator should purchase a tractor for individual use, and the optimum size tractor for a small farm operator. The secondary purpose focused on the dissemination of information for selecting a farming system and the optimum sized tractor.

The computer model was developed using the BASIC language. Nebraska Tractor Test data, standards of the American Society of Agricultural Engineers, and data on small farms in Pakistan. The model is very simple to use. However, the accuracy of the model depends upon accuracy of the inputs.

Using current cost data, custom hiring service was found to be the cheapest farming system for small farm operators, provided that a custom hiring service is readily available. The results showed that transition from bullock farming to tractor farming should occur when six hectares or more are being cultivated. Small tractors were not economical for small farm operators unless they do custom work. To justify the purchase of a small tractor, the farms should farm at least 20 hectares, or do 161 hours annual work requiring a tractor.

A dissemination plan for selecting the economical farming system and optimum sized tractor was prepared based on the diffusion adoption theory.

Taylor, Walter N. (1988). *Longitudinal study of undergraduate agriculture majors: 1977, 1982, and 1987.* (Staff Study). Mississippi State: Mississippi State University.

The purpose of this study was to describe trends that may have developed after ten years for both agricultural education majors and other college of agriculture majors. The study sought to (1) describe the characteristics of students enrolled in agriculture majors in the College of Agriculture and Home Economics at Mississippi State University in 1987; (2) compare the characteristics of students enrolled in the College of Agriculture and Home Economics at Mississippi State University in 1977 and 1982 to those enrolled in 1987; (3) compare the characteristics of students enrolled in colleges of agriculture in the South in 1977 and at Mississippi State University in 1977, 1982 and 1987; and (4) identify enrollment trends that may have developed over a ten-year period.

A stratified random sample of 261 students was surveyed. Usable responses were received from 70.9% of the sample. Data from these respondents were compared to those obtained from the 1977 and 1982 studies.

For the MSU students, trends appear to be developing in terms of the numbers of students from urban areas and those who enroll in high school agriculture courses. Recruitment efforts should focus on urban as well as rural

area students and should not be limited to those enrolled in high school agriculture. More of the 1977 agricultural education majors, when compared to other students in the 1977, 1982 and 1987 studies, had taken agriculture courses while in high school.

The parents of students in agriculture majors in 1987 continued to have strong influence on their children's choice of major and students continued to select majors that will prepare them for careers and lead to desired lifestyles. Parents of prospective students should be provided with current career information. Data from this study did not support some of the trends thought to have been developing in students who select agriculture majors when compared to data from the 1982 study.

MISSOURI

Brzozowski, R. J. (1988). *The relationship of selected student and teacher characteristics with competency in agricultural mechanics.* Doctoral dissertation, University of Missouri, Columbia.

The purpose of this study was to ascertain how specific student and teacher characteristics correlated to student performance on a competency-based agricultural mechanics achievement test for students completing the second year of basic agriculture instruction in Missouri.

Missouri sophomore agriculture students enrolled in the course entitled Agricultural Science II made up the population for the study. The sample was randomly selected by school and comprised 469 students from 41 schools. Students were administered a 125 item multiple choice examination at the close of the school year. The questions were derived from the validated competency lists for the courses of Agricultural Science I and II. Students, their agriculture instructors, and their guidance counselors completed surveys. The hypotheses were tested at the .05 alpha level using Spearman Rho and stepwise regression procedures.

The following conclusions were drawn concerning instruction in basic agricultural mechanics. (1) Students who apply learned agricultural mechanic skills outside of school are likely to perform better on a skill-related achievement test. (2) Students scoring higher on an agricultural mechanics achievement test are more likely to include agricultural mechanics in their plans for additional coursework. (3) The teachers' educational level, years of experience, or inservice training involvement will have little or no influence on student performance. (4) Student performance will improve when time allotted to presenting agricultural mechanics is increased. (5) Student performance will increase when the instructor presents more units from the agricultural mechanics curriculum.

Hoskey, M. R. (1988). *Opinions of public school administrators concerning agricultural education.* Doctoral dissertation, University of Missouri, Columbia.

The purpose of this study was to assess and compare the perceptions of school superintendents and vocational directors in Missouri regarding secondary agricultural education programs. The population consisted of all vocational directors and superintendents in Missouri during the 1986–87 school year. Cronbach's Alpha was used to estimate the reliability of the instrument. Hypotheses were tested at the .10 level.

The first null hypothesis of no difference between the opinions of administrators when grouped by position was rejected. Vocational directors were more in agreement with 71 of the statements and the superintendents were more in agreement with 28.

The second null hypothesis of no difference between the opinions of administrators when grouped by offering was also rejected. Administrators representing schools with a vocational agriculture program were more in agreement with 72 statements and those without vocational agriculture were more in agreement with 26 statements.

When the hypotheses were analyzed for interaction between position and offering, a significant interaction was found on 12 of the 100 items. Eleven were judged to have practical significance.

The following conclusions were developed as a result of this study. (1) The superintendents and directors with vocational agriculture programs had a more positive attitude toward vocational agriculture than those without programs. (2) There is more agreement with offering vocational agriculture at the high school and adult levels than at the junior high or postsecondary levels. (3) Agricultural subject matter could be integrated into the curriculum of grade levels 4–8. (4) Administrators were more in agreement with utilizing student-owned projects for hands-on experience than cooperative placement or school-owned projects. (5) Superintendents perceived their primary responsibility to be to elementary and secondary students rather than adults, while directors perceived equal responsibility. (6) Students and parents who are not familiar with vocational agriculture had the opinion that it is only for those preparing to farm. (7) Words like agriculture, vocational, and the name Future Farmers of America negatively affect enrollment. (8) More emphasis should be placed on problem solving and management and entrepreneurship instruction than supervised occupational experience programs. (9) Administrators agreed with receiving state and federal financial assistance but having locally offered and administered vocational agriculture programs. (10) There is a need for more public information about and awareness of vocational agriculture and agricultural employment needs.

Johnson, D. M., Linhardt, R. E., & Stewart, B. R. (1988). *Priorities of beginning teachers of agriculture in Missouri.* (Staff Study). Columbia: University of Missouri.

This study was conducted to provide information concerning the priorities of beginning teachers of agriculture. The primary purpose of the investigation was to determine the priorities that Missouri first-year agriculture teachers place on selected civic, self, family, and teaching-related activities. A secondary purpose of the research was to ascertain if differences existed between the priorities of beginning Missouri agriculture teachers in 1986 and the priorities of Missouri agriculture teachers in 1979.

The population for the study included all Missouri secondary agriculture instructors who began teaching in the fall of 1986 and 1987. The entire population was surveyed and provided data. Data for the comparison group was obtained from the 1979 study of Missouri secondary agriculture teachers reported by Goode and Stewart in 1981.

Data were collected using an instrument designed by Lockwood in 1976 and modified by Goode and Stewart in 1981. The instrument used a 0 to 4 (0 = least important: 4 = most important) Likert-type scale to determine the importance the agriculture teachers placed on 35 civic, church, family, and self-related activities. The instrument was designed so that the sum of each respondent's ratings could not exceed 70. This provision simulated reality by forcing teachers to choose among competing activities.

The analysis of variance procedure identified significant differences among the means at the .05 alpha level as established by the Duncan multiple

range test. The first hypothesis was rejected; beginning secondary agriculture teachers in Missouri were found to have priorities among the 35 activities studied.

The rankings of the activities of the 1986 beginning Missouri agriculture teachers were compared with the rankings of the agriculture teachers surveyed in 1979. The Spearman Rho correlation coefficient was .91, which was significant at the .05 level. Therefore, the second hypothesis of no significant relationship between rankings of the priorities of the two groups of teachers was rejected.

Both the beginning teachers and the teachers surveyed in 1979 assigned the highest priority to teaching local day classes followed in order by FFA activities on the local level, SOEP production and placement programs, and SOEP records. However, the 1986 beginning teachers placed less importance on Adult/Young Farmer activities than did the teachers surveyed in 1979.

It was concluded that Missouri beginning agriculture teachers have priorities for their activities. It was further noted that the beginning teachers placed the greatest importance on the three traditional components of the secondary school agriculture program: classroom instruction, the FFA, and the supervised occupational experience program.

Johnson, D. M., & Schumacher, L. G. (1987). *An assessment of agricultural mechanics lab management competencies.* (Staff Study). Columbia: University of Missouri.

The purpose of this study was to determine the laboratory management competencies needed by high school agriculture teachers as they teach agricultural mechanics. Respondents were first asked to list 25 laboratory management competencies which they felt were needed by secondary agriculture teachers as they teach agricultural mechanics. The responses were then edited and combined to form a list of 50 competencies. The respondents were then asked to rate the importance of each competency identified. The population for the investigation was the 1986 National FFA Contest Committee.

Respondents perceived safety instruction related competencies as most important for the secondary agriculture teacher. The installation of equipment, equipment repair, and facility repair were considered least important of the competencies. This indicated that, although these were important competencies, the instructors' time would be better spent on other laboratory management competencies. Based on the fact that no competency was rated less than 2.9 on a 5-point scale, the researchers concluded that teacher educators should employ these competencies in teaching methods courses which focus on agricultural mechanics.

Schumacher, L. G., & Burhoe, S. (1987). *An analysis of the use of agricultural information data bases.* (Staff Study). Columbia: University of Missouri.

The purpose of this study was to gather information concerning the use of agricultural information data bases. The population of the study was the June subscribers to *Doane's Agricultural Computing Newsletter.* A total of 391

subscribers from 50 states and five Canadian provinces responded to the direct mail questionnaire.

Approximately 76% of the respondents had IBM computers while 8% reported owning an Apple computer. Respondents reported using AgLine (22.7%), AgNet (9.83%), Acres (9.26%), and AgriData (7.93%) more frequently than other information data bases. Approximately 49% of the respondents had failed to use AgLine. When asked why they had failed to use AgLine, 84 or 25% of the respondents reported difficulty in getting their modem to work. Nearly 50% of the respondents' online time was spent using agriculturally related information data bases. The data indicated that respondents need training on how to use agriculture information data bases and computer communication hardware and software. Agriculture teachers who lack these skills may find themselves at a disadvantage as they launch their local agricultural program into the information age.

Nur, A. L. (1987). *Adult education in agriculture: Perceptions of superintendents and teachers.* Doctoral dissertation, University of Missouri, Columbia.

The purpose of this study was to assess and compare the perceptions of agriculture teachers and their superintendents regarding agricultural education programs for adults. Differences in perceptions of the need for, benefits of, operation of, and funding of agricultural education programs for adults were examined by position, program type, and interaction between position and program type.

The population for this study included all agriculture teachers and their superintendents in public secondary schools in Missouri. The population was stratified by program type. A random proportional sample of schools was selected from each program type and the superintendent and an agriculture teacher were selected to participate.

Cronbach's alpha was used to estimate instrument reliability. Hypotheses were tested using multivariate analysis of variance and univariate analysis of variance procedures.

Superintendents and teachers differed on 10 items relating to need, 11 items relating to benefits, 7 items relating to operation, and 13 items relating to funding. When analyzed by type of program, there were differences among groups on seven items relating to need, four items relating to benefits, six items relating to operation, and on seven items relating to funding. There were significant interaction effects associated with four items. All four hypotheses were rejected.

(1) Superintendents and agriculture teachers have a positive perception of the need for agricultural education programs for adults in Missouri. (2) Superintendents and agriculture teachers have a positive perception of the benefits derived from agricultural education programs for adults. (3) Superintendents support the concept that agricultural education programs for adults should be primarily funded from sources other than the local school. (4) Agriculture teachers support the concept that agricultural education programs for adults should be partially funded by the local school. (5) Agriculture teachers who are involved in working with adults are more positive about the adult program.

Suradisastra, K. (1987). *Farmers' perceptions of extension activities in western Kenya.* Doctoral dissertation, University of Missouri, Columbia.

The purpose of this study was to examine the relationship between farmers' personal or farm characteristics and variables related to extension activities and the use of improved farm practices in three different agricultural locations in western Kenya.

One hundred and four farmers and 60 extension personnel were randomly selected as respondents. Data were collected during a three-month period using a structured questionnaire. The dependent variables were developed using the Guttman scaling method.

Thirteen hypotheses were formulated and tested at the .05 level of significance. The hypotheses were tested using Pearson product moment correlation and point-biserial correlation procedures.

Farmers' personal or farm characteristics were significantly related to farmers' exposure to extension personnel and media, farmers' perception of extension personnel, labor utilization, and the use of inputs in crop and livestock production. Personal characteristics of the extension personnel were also found to be significantly related to job related activities.

The following conclusions were drawn for farmers in western Kenya. (1) The extent of farmers' exposure to extension activities differs among geographic locations. (2) The greater the family size, farm size, crops grown, and number of sheep raised, the more likely the farmers will be exposed to extension personnel. (3) Younger, better-educated farmers are more likely to be exposed to extension media. (4) Farmers with greater exposure to extension personnel tend to use more inputs in livestock production.

White, C. D. (1988). *Inner city high school student perceptions about careers in agriculture.* Doctoral dissertation, University of Missouri, Columbia.

The purpose of the study was to ascertain the perceptions of inner city high school students toward career opportunities in agriculture, career areas in agriculture, and selecting a college.

The study included data from a purposive sample of 280 inner city high school students, of which 203 were not enrolled and 77 were enrolled in agricultural courses. All students were asked to complete a questionnaire which contained questions about career opportunities in agriculture, career areas in agriculture, and selecting a college. Multivariate analysis of variance and the analysis of variance procedures were used to ascertain if significant differences existed between the responses of agricultural and nonagricultural students, the male and female students, and the black and other students.

The following conclusions were based on the analysis of the responses of inner city students that provided data for this study. (1) Inner city students believe that persons working in agriculture should have an agricultural background, will work outdoors, have opportunity for advancement, and can learn the skills needed for employment on the job. (2) Although inner city students believe that there are career opportunities available in many areas of agriculture, they believe the greatest opportunity for jobs exists in engineering, education and extension, food service and lodging management, and

horticulture. (3) Inner city students are more likely to turn to parents, teachers, friends, family members, and high school counselors for advice in making career decisions. (4) Students are more likely to be influenced by money related information about financial aids, job opportunities, and costs when selecting a college or university. (5) Educators preparing career information about agriculture can plan common experiences for inner city students regardless of their race, gender, or agricultural background.

MONTANA

Wolfe, T. L. (1988). *Factors which influence retention of first-year 4-H leaders.* Master of Science thesis, University of Montana, Bozeman.

The purpose of this study was to determine whether certain characteristics of first- and second-year volunteer 4-H leaders who terminate their leadership are different from those who continue their leadership in the 4-H program.

Data for this study were gathered by a mailed questionnaire sent to 370 randomly selected first-year 4-H leaders in 25 Montana counties. Valid responses were received from 189 leaders who continued their leadership a second and third year, and 58 who dropped after their first year of leadership. Data were analyzed by the chi-square test of statistical independence at the .05 level of significance. The test was applied to 30 null hypotheses to determine if relationships existed between characteristics and 4-H leader continuance.

Analysis of the data collected shows that statistical differences exist between the leaders who terminate after one year of leadership and those who continue for two or three to influence leadership tenure: age, employment outside the home, place of residence, number of children, involvement of children in the 4-H program, degree of satisfaction experienced as a first-year leader, attendance at 4-H club meetings and 4-H activities, participation in leader training sessions, the number of contacts made with the county extension office, acceptance by other leaders, being included in decision making regarding 4-H club programs and policy, and the strength of interest felt at the beginning of the year when compared to the level of interest at the end of the first year.

Leaders who continued leadership were 35–44 years of age, lived on a farm or ranch, had children in the program, were satisfied with 4-H leadership, attended six or more club meetings and four or more activities per year, participated in leader training, made two or more contacts with the county extension office per month, were accepted by other leaders, were included in decision making, and had greater strength of interest at the end of the year than at the beginning.

NEBRASKA

Barrett, L. A., & Horner, J. (1986). *Profile of rural leadership.* (Staff Study). Lincoln: University of Nebraska.

This study was designed to develop a psychological type profile of agricultural leaders that could be used to plan intervention strategies.

The sample was composed of 91 established (commodity group) leaders; 117 young (age 25–40) LEAD Fellows; 49 young farmer/rancher leaders; 41 youth (FFA/4-H) state officers; 63 vocational agriculture teachers; 82 ex-vocational agriculture teachers; and 97 extension agents.

Respondents were administered the Myers-Briggs Type Indicator Form G through mailings and group meetings.

The psychological type profile of agricultural leaders as a composite was different compared to that of the general population. Agricultural leaders were more introverted, sensing, thinking, and judging. The youth leaders were the only group similar to the general population—more intuitive-feeling and less sensing-judging.

Vocational agriculture teachers were different from a sample of secondary teachers—less intuitive and less feeling. The young farmer/rancher and LEAD Fellows were the only groups to be more intuitive-thinking, less sensing-judging than the composite group. The established leaders were more thinking, less feeling, more judging, and less perceptive.

The composite agricultural leadership sample, as a group, tends to lack native interpersonal relationship skills (high introversion and thinking) and needs developmental programs in that area.

The psychological nature of vocational agriculture teachers suggests that they may be more naturally interested in instructional content than in the process of teaching. Preservice and in-service instruction should emphasize how improving the teaching process can increase effectiveness.

Youth leaders who are intuitives tend not to stay in agriculture; therefore, it is important to communicate to them that agriculture is dynamic and in need of innovative, people-skilled leaders.

Dillon, R. D. (1988). *Comparison of the perceptions of three groups concerning emphasis of vocational agriculture subject matter in the local vocational agriculture curriculum.* (Staff Study). Lincoln: University of Nebraska.

The purpose of the study was to determine the extent of agreement among secondary school principals, vocational agriculture teachers, and senior secondary vocational agriculture students concerning their perception of the emphasis placed on thirty-two agricultural agribusiness subject matter areas in the vocational agriculture curriculum. Forty-eight or 35% of the secondary agriculture teachers in Nebraska were randomly selected, and all participated in the study.

Results were received from 45 principals, 45 vocational agriculture teachers, and 273 students. Significant differences were found between the three respondent groups for six of the eight agriculture subject groups studied. The important conclusion is that secondary principals believed a much greater

emphasis is placed on agricultural subject matter in vocational agriculture curriculum than do teachers of vocational agriculture or secondary vocational agriculture students.

Horner, J. T., & Barrett, L. (1986). *Personality: Farmers' Strength—Potential Problem.* (Staff Study). Lincoln: University of Nebraska.

An attempt was made in this study to determine if the psychological types of farm couples were different from other populations, and if differences were found, to determine if relationships existed between stress and type. Specific objectives of the study were to (1) develop a psychological type profile of farm couples in Nebraska; (2) determine if type differences existed between farm males and females; (3) compare the personality types of farm couples with a sample from the general population; and (4) synthesize implications useful for counselors, clergy, educators, and others as they communicate with, counsel, and educate farm couples or other individuals facing stressful situations.

A well-researched instrument, the Myers-Briggs Type Indicator (MBTI), Form G, was determined to be most appropriate for collecting data for this study. The indicator has been documented by numerous studies to have a reliability and validity of .85. The sample population consisted of 1,026 farm adults (526 males and 500 females). The MBTI was administered by mail to members of the sample population.

The findings of this study revealed that farm couples were different from the mythical "average" persons. These findings are a key to understanding how farm couples cope with distress. A "typical" farm man was an introverted, sensing, thinking, and judging type; the "typical" farm woman tended to be an introverted, sensing, feeling, and judging type.

Based upon Jungian psychological type theory, farm couples' strength lies in being hardworking, realistic, conservative, and traditionally oriented. Their weaknesses lie in their resistance to change, dislike of risk, pessimism, and strong ties to tradition. These characteristics, in combination, may set up a higher than usual stress situation.

Understanding the psychological profile of persons engaged in agriculture can be most helpful for the people themselves; however, it can also help counselors, clergy, and educators to plan more effective strategies for those special types of people.

NEW YORK

Applebee, Glenn J. (1988). *Assessing needs for organizational development, staff development and management during periods of organizational and enrollment decline in a not-for-profit, nonformal educational system.* Doctoral dissertation, Cornell University, Ithaca.

The purpose of this study was to obtain information related to educational theories of enrollment and organizational decline from an example of a large, not-for-profit, nonformal educational system to develop recommendations useful in addressing decline with other than financial resources.

Determination was made of changes in human resource allocations, system-wide program enrollments, program offerings, communication strategies, enrollment management strategies and some values of professional staff that led to recommendations for management strategies.

The data source was 115 county extension professional leadership staff stratified by six county types from a population of 178 county extension professional leadership staff in 57 counties. A content valid and reliable research instrument was developed by the researcher from a review of literature.

This three-part study (1) used existing enrollment and staffing data with groupings for different counties to provide for a basis of analysis, (2) used a questionnaire and follow-up structured interviews to collect data, and (3) used a modified Delphi technique to ascertain the level of agreement on recommendations.

Selected conclusions follow: There are various combinations of staffing and enrollment growth, stability or decline in the system. There are contrasts between actual enrollment figures and perceptions of professional managers. There are different reasons for decline and different types of audiences for programs depending on county types. Staff are highly focused on the local program situation. There are concentrations on use of internal communication methods. The policy of the organization in relation to enrollment is not clear. The system is most attractive to populations that may not have the greatest need for educational programs. The programs offered in more urban counties are likely to be perceived by management staff as more in-depth, balanced, diverse, and specialized in methods and content than those in more rural counties. There is a need for strategies to help staff plan how to discontinue ineffective, inefficient or outdated program efforts. There is a need for a balance between generalist and specialist staffing. Staff need support to be able to conduct program innovations from other than the local level.

Campbell, Gary. (1988). *Veterinary science technology curricula: Their impact on licensing and employment.* Doctoral dissertation, Cornell University, Ithaca.

This descriptive study was an investigation of Veterinary Science Technology programs offered at two New York State postsecondary educational institutions. The purpose of the study was to determine the knowledge, skills, and attitudes that should be taught and given high priority in veterinary science

technology curricula and determine the extent to which the curricular preparation matches the New York State licensure examination and the tasks required for employment as viewed by program graduates and their employers. Graduates from 1980, 1982, 1984, and 1986 were surveyed.

Analysis of data revealed a majority of graduates (82.2%) had entered an occupation related to their occupational preparation; 69.0% of them were employed as veterinarian technicians (animal health technicians).

Conclusions drawn include (1) the industry is predominantly female, (2) low salaries are being paid in light of educational training and licensure, and (3) this training and licensure is not always beneficial in obtaining employment or promotion.

Silva-Guerrero, Luis F. (1988). *Research priorities and factors affecting research in agricultural education in the United States.* Doctoral dissertation, Cornell University, Ithaca.

The purpose of this descriptive study was to determine what should be the research priorities for agricultural education and to identify factors enhancing or inhibiting research in the profession. A questionnaire, both content valid and reliable, was used to address the eight objectives for this study.

Agricultural teacher education department heads (n=62) and research experts in agricultural education (n=37) were asked to indicate their perceived priority levels for 109 research topics clustered in thirteen categories and to determine whether the topics should be addressed at the national, regional, or state levels. Respondents also indicated the extent to which ten factors enhanced or inhibited research in agricultural education in their universities. The response rate was 84%.

Findings revealed that priority ratings from research experts and department heads were similar by the two groups and by the four regions of the American Association of Teacher Educators in Agricultural Education. At least two-thirds of the respondents agreed that twenty-two topics should be addressed at the national level and five at the state level which left eighty-two topics not categorized at a specific level.

The highest priority categories for research in agricultural education included "funding for agricultural education," "evaluation," and "international agricultural education." Research topics with the highest priority ratings included "determining the new and emerging skills needed by students to work in biotechnology, hightechnology and agribusiness," "determining the appropriate curriculum for agricultural education," and "determining the long-term impact of secondary agriculture on graduates." Priority areas identified in the research should be considered to develop a research agenda for the profession.

Sutphin, D. (1988a). *Excellence in agricultural education working paper series nos. 1–9.* (Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This series of nine working papers describes the status of agricultural education in the New York State public school system and the impact of Regents mandates on these programs. The papers also have implications for the overall impact of new Regents mandates on both the school curricula and on occupational education (synonymous with vocational education). This series should be useful to educators in state and individual school districts who plan agricultural and occupational education programs.

Twenty-one central school and eight BOCES (Board of Cooperative Educational Services) in New York State participated in this study. The schools were systematically selected on the basis of geographical distribution across the state and by school size, which ranged in grades 7–12 from less than 300 students to over 1,200. Other factors considered in the selection process were the number of agriculture teachers in the school (single or multiple) and the extent agriculture teachers had participated in state education department sponsored inservice education. Hence, the central schools and BOCES were a representative sample of agricultural education programs in the state.

Administrators, guidance counselors, and agriculture teachers completed content valid and reliable questionnaires and were interviewed. A representative sample of both agriculture and tenth grade students in the schools completed valid and reliable questionnaires.

Sutphin, D. (1988b). *Factors affecting funding of agricultural education in New York State public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

The purpose of this study was to determine the funding needs for agricultural education as perceived by agriculture teachers, guidance counselors, and administrators in 21 central school and 8 occupational centers in New York State. The stratified random sample of schools were representative of the state.

Although some schools are adequately funded and equipped, most need to upgrade equipment, tools, and teaching facilities and update expendable materials. The new agricultural education program is being implemented at a time when some schools are seeking to conserve finances. The scale of occupational centers agricultural programs poses special funding needs. Most schools need funds to supplement local school budgets.

Sutphin, D. (1988c). *Factors affecting inservice in agricultural education in the public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This descriptive study sought to describe (1) types of inservice needed and (2) factors that affect inservice programs for agricultural education. A representative sample of New York agricultural programs selected for this study included 21 central schools and 8 Boards of Cooperative Educational Services

(BOCES). Agriculture teachers, guidance counselors, and administrators in these schools completed questionnaires and were interviewed.

Inservice education is needed to address changes in the new agricultural education curriculum. Areas of need are program updates, program development, curriculum and instructional development, and teacher professional development. Although workshops are useful, teachers requested time for self-selected inservice to be devoted to self-study and development. Inservice may not resolve some school problems such as student access to occupational programs, which is a policy issue.

Sutphin, D. (1988d). *Factors affecting scheduling of agricultural education in the New York State public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This study describes scheduling practices used for agricultural education and differences in the perceptions of educators in the sample. Current and perceived future scheduling policies, practices, and related factors are described. A representative sample of New York agricultural programs, which included 21 central schools and 8 Boards of Cooperative Educational Services (BOCES), was selected. Agriculture teachers, guidance counselors, administrators, and a random sample of tenth grade and agriculture students in these schools completed questionnaires and were interviewed.

Scheduling trends include more individual student counseling and computer scheduling. The new Regents curriculum makes it difficult to schedule agriculture and other occupational classes because increased requirements occupy priority time in school curricula. Honors students often are completely closed out of occupational education in many schools. Close cooperation and the creative talents of educators will be required to remove the barriers to scheduling occupational courses in central schools and the much worse obstacles at occupational centers. Agriculture teachers should work closely with their school administrators to minimize student scheduling conflicts. The state regents should study modifications to resolve the scheduling dilemma.

Sutphin, D. (1988c). *Factors affecting sequencing of agricultural education in the New York State public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

The purpose of this study was to describe the factors affecting the sequencing of agricultural education curriculum and the sequences developed in New York State. A representative sample of 21 central schools and 8 BOCES agricultural education programs were selected from the state population of 220 agricultural programs. Agriculture teachers, administrators, and guidance counselors responded to a written survey and interviews.

The new agricultural education sequence provided a needed change, is more broadly focused, and addresses changes in the agricultural sciences and industry; its configuration differs significantly from the previous sequence. Schools are phasing in their new curricula but some have not completed plans

for a sequence and need to communicate changes to appropriate audiences. Informal student study options outside the school day and creative strategies for sequencing agricultural education presented in this study should be considered by school district educators. Strategies that prove convenient for master scheduling but which limit access to agricultural education should be abandoned when possible. Educators should continue to refine the agricultural sequence as teachers experiment with new strategies.

Sutphin, D. (1988f). *Factors affecting student counseling for agricultural education in New York State.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This descriptive ex post facto study sought to determine how students are counseled about agricultural education and determine differences in the perceptions of agriculture teachers, administrators, and guidance counselors. Agriculture teachers, administrators, guidance counselors, and a random sample of agriculture students and tenth grade students in 21 high schools and 8 Boards of Cooperative Educational Services (BOCES) representative of programs in New York State completed questionnaires and were interviewed.

Factors that influence counselors, administrators, and agriculture teachers to enroll students in agricultural education (in order of importance) are students' career interests, recommendations from other significant people, and students' agricultural work experience, educational aspirations, and academic ability. When questioned about who influenced them to enroll in agriculture, agriculture students felt most influenced by parents and agriculture teachers. Tenth grade students were most influenced first, by parents and second, by guidance counselors. The data suggest that schools should improve guidance practices to inform students about the new agricultural education curricula at central schools and BOCES.

Sutphin, D. (1988g). *Factors affecting the identification of an appropriate clientele to study agricultural education in the New York State public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This descriptive study sought to determine the type of students who should study agricultural education in New York State and the factors that affect this determination. Findings were derived from a sample of New York agricultural programs in 21 central schools and 8 Boards of Cooperative Educational Services (BOCES). Agriculture teachers, guidance counselors, and administrators completed a questionnaire and were interviewed. A representative sample of agriculture and tenth grade students completed a questionnaire.

This study shows that a cross section of students by academic ability level, educational aspirations, and agricultural work experience should enroll in agricultural education to meet the employment needs in a diverse agricultural industry. The industry needs students who will complete advanced study in agriculture. Educators should consider factors presented in this paper that

positively and negatively affect enrollment as they develop school strategies to identify potential agriculture students. Among the most persistent negative factors on student enrollment in agricultural education are lack of information and/or misconceptions about the agriculture program. Appropriate strategies can minimize some of the restrictions on student access found in the new curriculum.

Sutphin, D. (1988h). *Factors affecting the staffing of agricultural education programs in the New York State public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

The purpose of this study was to describe the factors, strategies, and conditions that impact the staffing of agricultural education programs. Agriculture teachers, administrators, and guidance counselors in 21 high schools and 8 BOCES representative of the state completed a questionnaire and were interviewed. Differences in perceptions among respondents were determined.

Agricultural education programs are adequately staffed. Agriculture teachers have summer programs that carry credit under the new Regents curriculum and can teach Introduction to Occupations modules and take other assignments in schools should enrollments decline in agriculture. High-quality teaching will help maintain enrollments needed to provide a work force for the agricultural industry, maintain viable agricultural education programs in the state, and lead high-quality students to higher education in agriculture. Staffing at occupational centers is more affected by changes in the school curricula than central schools, although both systems may experience changes in staffing patterns.

Sutphin, D. (1988i). *Factors related to implementing the new agricultural curriculum in the New York public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

This study sought to describe the current status of agricultural education in New York State and the factors which have affected the implementation of a new state curriculum. Administrators, guidance counselors, and agriculture teachers in 21 New York School Districts and 8 BOCES completed questionnaires and were interviewed. The schools were a representative sample, geographically distributed across the state and varied by size, number of agriculture teachers, and the extent of teacher inservice training on the new agricultural curriculum.

A new agricultural education curriculum has been implemented in New York secondary school system; development will continue. The new curriculum addresses broad purposes for human development, preparation for further education, job placement, career exploration, and general education. It also provides a positive learning environment, develops cognitive skills such as problem solving, math and science skills, and contributes positive instructional components to the total school curriculum. The program image is positive in most schools and communities. Teachers should continue to develop their

programs and consult with appropriate school officials during the process. Teachers need contract time for development.

Sutphin, D. (1988j). *Factors related to the context for agricultural education in the New York public school system.* (Research Report of Staff Study and New York State Education Department Project). Ithaca: Cornell University.

The purpose of this study was to describe the forces and factors that impact on agricultural education within the school and community context. The findings in this paper describe the current status of agricultural education in a representative sample of 21 New York School Districts and 8 BOCES. Administrators, guidance counselors, and agriculture teachers in these schools completed questionnaires and were interviewed. A random sample of tenth grade students and agriculture students also completed questionnaires.

School and community support for agricultural education, especially in rural communities, is strong. However, new Regents mandates make it difficult for students, especially those in Regents honors, to access agricultural education. This research shows that the new curriculum for agricultural education can meet the needs of a changing agricultural industry, prepare students for citizenship and employment in local communities, and meet their general educational needs. School systems should use creative strategies to cope with the problem of student access to agricultural education; the Regents should consider adjustments to their present regulations.

NORTH CAROLINA

Beavers III, K. C., Jewell, L. R., & Malpiedi, B. J. (1987). *Job satisfaction of North Carolina vocational agriculture teachers.* Doctoral dissertation, North Carolina State University, Raleigh.

The purpose of this study was to examine selected variables for vocational agriculture teachers in North Carolina, to determine the degree of job satisfaction for those teachers, and to determine whether the selected variables were related to job satisfaction for the teachers.

The sample of 320 teachers was randomly selected from the population of 375 vocational agriculture teachers employed in North Carolina during the 1965–66 school year.

The questionnaire included the Minnesota Satisfaction Questionnaire (Q) short form which provided a measure of intrinsic, extrinsic, and overall job satisfaction for teachers. A second part of the questionnaire was used to determine teacher perceptions of 15 independent factors. Part III was used to collect demographic data. An 81.25% return rate was realized. Frequencies, means, standard deviations, and Pearson correlations were used to analyze the data.

Teachers were most satisfied with their professional acceptance by other vocational agriculture teachers in the state and by members of the NCVATA, and were satisfied with their school faculties. Teachers were least satisfied with financial support for local salary supplements, student academic ability, having to perform noninstructional duties. The study found between the levels of satisfaction with 18 research variables and overall job satisfaction, only low to moderate practical relationships existed. In addition, little of any practical relationship was found to exist between job satisfaction and years of teaching experience.

Professional support is a source of satisfaction for North Carolina vocational agricultural teachers. However, further study of North Carolina financial support for teachers as well as the assignment of noninstructional duties to teachers is needed.

Flowers, J. L. (1988). *Status of competency based education in North Carolina's high school vocational education programs.* (Staff Study). Raleigh: North Carolina State University, North Carolina Department of Public Instruction, Division of Vocational Education.

The purpose of this study was to examine the current status of competency-based vocational education (CBVE) in North Carolina's high school vocational programs. A secondary purpose of the study was to determine the levels of use of competency-based curriculum materials developed and disseminated by the Division of Vocational Education.

The population for this study consisted of all high school vocational teachers in the seven vocational program areas in North Carolina employed during the 1987–88 academic year (N-4,146). A stratified proportional random sampling technique was used to select 353 teachers from the population.

The instrument used in this descriptive study was designed by the

researcher and consisted of three parts. Part I of the instrument examined the extent to which vocational teachers used CBVE curriculum materials provided by the State Department of Public Instruction. Part II determined the level of implementation for each of the major components of the North Carolina model for implementation for each of the major components of the North Carolina model for CBVE. Part III of the instrument determined which factors had contributed to the current level of CBVE implementation.

Data were collected from 198 vocational teachers and represented all seven vocational program areas. The following conclusions were drawn as a result of the findings of this study. (1) A majority of the teachers in the state are using the teacher handbooks and the curriculum guides developed to assist them in implementing CBVE. Competency test-item banks have not received a great deal of use by the teachers in the state and have not significantly impacted competency-based vocational education. (2) Competencies developed by students are not being documented sufficiently by using class progress charts and student competency records. (3) CBVE has been "moderately" implemented in the vocational programs in North Carolina. Several of the key items which characterize CBVE programs have currently only been minimally implemented. (4) The State Department of Public Instruction's and local administrator's support for CBVE have been important factors in influencing vocational teachers to implement CBVE in their programs.

Jewell, L. T. (1987a). *Perceptions of North Carolina public school administrators toward vocational agriculture programs.* (Staff Study). Raleigh: North Carolina State University.

The purpose of this study was to examine the current attitudes of school administrators in various administrative positions toward their local vocational agriculture programs and to compare these attitudes with those of a similar study that was conducted during the 1979–80 academic year. The study was designed to determine if significant differences existed in attitudes of the administrators or if trends were occurring in perceptions of school administrators toward vocational agriculture/agribusiness programs and/or teacher preparation in vocational education.

The population for the study consisted of all North Carolina public secondary school superintendents, vocational directors, and principals during the 1979/80 and 1985/86 academic years which had vocational agriculture as a part of their curricula. The study consisted of 50 superintendents, 50 vocational directors, and 100 principals from each of the two academic years. The study sample was in excess of 33% of the population for each type of administrator for each of the years under study.

A confidential 45-item survey instrument was used to collect the research data. The data were analyzed using chi square statistics. The following conclusions were drawn as a result of this study. (1) Administrators agree the main purpose of vocational agriculture is to train students for employment in agricultural occupations. (2) Administrators perceive that communities consider vocational agriculture important. (3) Administrators believe that vocational agriculture students are truly interested in agriculture. (4) Administrators consider knowledge of agriculture and its importance in our society as an

important aspect of vocational agriculture programs. (5) Vocational agriculture teachers need improvement in the areas of professional improvement, cooperation with administration, cooperation with other faculty members, and grooming while in school. (6) Many vocational agriculture teachers are inadequate in the areas of housekeeping, discipline of students, methods of teaching, and organizing young and adult farmer classes. (7) Principals perceive more need for vocational agriculture programs to be general and to provide general knowledge of agriculture. (8) In most instances the perceptions of the three types of school administrators remained the same as they were in 1978/79.

Jewell, L. T. (1987b). *Predicting student performance on core batteries I and II of the national teacher examinations.* (Staff Study). Raleigh: North Carolina State University.

The purpose of this study was to analyze the records of recent graduates of the Agricultural Education Program at North Carolina State University concerning selected academic variables and to determine how well those variables predict student performance on the Communication Skills and General Knowledge portions of the National Teacher Examination. The objective of the study was to determine which predictor variables or combinations of predictor variables were effective predictors of examinees' performance on the Communication Skills and General Knowledge portions of the National Teacher Examination.

The population for the study consisted of students (N=106) who graduated from the Agricultural Education Program at North Carolina State University between July 1, 1981 and May 9, 1987 and were admitted to the university as freshmen students.

Based on research by Brown in 1974 and Tarver in 1983, the following academic variables were included in the study: (1) GPA in a selected intermediate professional education course; (2) GPA in required English courses; (3) GPA in required math courses; (4) SAT - verbal scores; (5) SAT - math scores; and (6) academic admission index scores.

Stepwise regression analyses were employed to determine the strength of the relationship between each predictor variable and combination of predictor variables and National Teacher Examination scores. Descriptive statistics were used to describe the sample. The following conclusions were drawn as a result of the findings in this study. (1) Student performance on the SATV along with performance in completing ED 313 and required English courses can be used as good predictors for determining success on the Communication Skills portion of the NTE. (2) Student performance on the verbal and math portions of the SAT and Ed 313, can be used as good predictors for success on the General Knowledge portion of the NTE. (3) The GPA in required math courses and academic admission index scores are not related to student performance on either the Communication Skills or General Knowledge portions of the NTE. (4) The Board of Governors decision to raise the minimum passing score for Communication Skills and General Knowledge portions of the NTE will not significantly affect agricultural education majors at North Carolina State University.

Malpiedi, B. J., & Blake, R. D. (1987). *Characteristics and attitudes associated with the use of microcomputers by North Carolina vocational agriculture teachers.* Master of Education study, North Carolina State University, Raleigh.

The purpose of this study was to determine the degree of microcomputer use and the microcomputer anxiety levels, a measure of attitudes, of North Carolina vocational agriculture teachers. Completed questionnaires were returned by 163 of the 189 sampled teachers for an 86% return rate. The survey instrument consisted of three parts: part 1 elicited demographic, academic training, and computer education information; part 2 was used to determine the degree of computer use; and part 3 included the Computer Opinion Survey from Mauer and Simonson, 1984.

Ninety-five percent of the teachers were males; over 50% of them ranged age from 21 to 40 years. Slightly over half of the teachers (54.6%) used microcomputers. A lack of university sponsored computer training was evident because only 24% of the teachers completed one or more computer semester courses. Teachers used microcomputers 30 minutes per day, primarily as a computer aided instructional tool, followed by a tool for completing school related reports, correspondence, inventories, and budgets. Teachers had a low to moderate anxiety level as measured by the Computer Opinion Survey.

Statistically significant ($p<.01$) and low to moderate negative associations were found for the relationships between computer anxiety and the following characteristics: daily hours of use, use as a teaching tool, number of computer courses, and in-service hours of computer training. A statistically significant positive relationship existed between age and computer anxiety scores.

Computer education for North Carolina vocational agriculture teachers has not occurred to any great extent. Teachers' attitudes toward microcomputers were mostly positive and became more positive with increased education and computer usage. Instructors should be encouraged that teachers are positive toward the use of microcomputers and desire computer education. However, the instructors need to be sensitive to the age of the participants as a potential attitudinal barrier toward computer use.

Voth, D. E., Clouse, J. P., & Malpiedi, B. J. (1987). *The evaluation of the Building Our American Communities (BOAC) community development program of the Future Farmers of America (FFA).* (National FFA Foundation and RJR Nabisco, Inc. funded study). Alexandria, VA; Fayetteville, AR; Blacksburg, VA; and Raleigh, NC: Departments of Agricultural Education.

The objectives of the study were to determine accomplishments and values of BOAC as well as to provide current and continuing information useful to improving the BOAC program. A multimethod approach was used. This included analysis of national level statistical information on chapter participation in BOAC; surveys of teachers and students participating in the National Conference on Community Development; a Virginia survey of BOAC participating and nonparticipating FFA chapters; a national survey of BOAC participating and nonparticipating FFA chapters; and twelve case studies carried out nationwide including surveys to FFA members in the selected schools.

Findings indicated that participation in the BOAC program was not competitive with other FFA programs or with class time devoted to the vocational agriculture curriculum. Rather, participants used the program to complement the vocational agriculture curriculum and other FFA activities. Chapters participating in the BOAC program had higher percentages of FFA membership, received higher levels of recognition for FFA activities, and generally participated in more FFA activities than did FFA chapters that did not participate in the BOAC program. The students and particularly the teachers who participated in BOAC were more actively involved in their communities, received more honors, and held more leadership positions than did nonparticipants. Finally, many more FFA chapters were conducting community development and community service projects than was evident from the National FFA reporting system.

Vocational agriculture instructors need assistance in implementing the BOAC program as a tool for developing community-based activities as part of the curriculum to support the students' and communities' needs. Future research is needed to determine the long-range benefits of participation in the BOAC program. An attempt should be made to define a model for more effective education in entrepreneurial leadership based on the current Vocational Agriculture/FFA/SOE/BOAC formula.

NORTH DAKOTA

Mueller, Edward J. (1988). *North Dakota agribusiness employment needs.* Master of Science thesis, North Dakota State University, Fargo.

The purpose of this study was to determine and update employment opportunities within eight selected agribusiness industries. Specific objectives were to determine 1) agricultural employment opportunities, 2) level of training preferred to gain job entry, 3) experience preferred for entry into occupational positions, and 4) future employment and trends within eight selected agribusiness industries.

Direct mail questionnaires were modified from the previous study and mailed to implement, grain, dairy processing, veterinary, meat processing, agricultural finance, and livestock marketing businesses. One follow-up mailing was used to improve the response rate. WATS-line telephone calls were made to clarify data and improve the response rate.

Specific occupations were identified and revised from the previous study within the eight selected agribusiness industries. Agribusiness managers identified the preferred years of training and experience preferred to gain job entry. Projections of employment opportunities were made for a six-year period and replacement needs were estimated.

Projected full-time employment opportunities were stable, with some variance in trend between the selected agribusiness industries. An increase in anticipated employment is indicated in the implement, veterinary, and meat processing businesses, whereas a decrease is expected in grain, dairy processing and distribution, and agricultural finance industries. Very little change in the horticulture and livestock marketing industries is expected. The average number of employees per business is expected to decrease slightly during the period from 1987 to 1993. Unstable economic conditions that existed at the time of the survey may have affected the response for some employers. Expectations of employers for preferred levels of training and experience varied greatly within occupational positions and agribusiness industries, yet were slightly lower than in the previous study.

Oehlke, Paul H. (1988). *Follow up of North Dakota State College of Science farm business management graduates from the years 1978 through 1983.* Master of Science thesis, North Dakota State University, Fargo.

The primary purpose of this study was to determine the placement of North Dakota State College of Science agricultural mechanics/farm business management graduates after they began work. Specific objectives were to 1) determine the occupational placement of these NDSCS graduates during the years 1978 through 1983, 2) describe the degree of establishment for those who listed farming as their current occupation, 3) determine the value these graduates placed on their education as applied to their present occupation, 4) determine the present geographical locale of the graduates, 5) determine the job history of these graduates from the time of graduation through their current positions, 6) determine the type of additional education completed by the graduates through the time of the survey.

A direct mail questionnaire was developed, pilot tested, and sent to the 172 NDSCS farm business management education graduates from the years 1978 through 1983. There were 155 responses for a rate of 90%. Data were summarized and tabulated for each objective of the study.

This study showed that the NDSCS agribusiness program is fulfilling a need by providing agricultural education to potential workers in the field of agriculture. Graduates have a placement rate of 91.6% in this field—83.2% employed in farming operations. NDSCS graduates also showed a high degree of satisfaction in the education they received as it relates to their present employment.

OHIO

Barrick, R. K., Clark, R. W., & Newcomb, L. H. (1988). *Vocational supervisor burnout and job satisfaction.* (Staff Study). Columbus: Ohio State University.

The purpose of this study was to determine the level of burnout, job satisfaction, occupational stress, personal strain, and personal coping resources of vocational supervisors.

The population of the study consisted of vocational supervisors in Ohio (N = 202). A census was used for this study. Independent variables were job satisfaction, occupational stress, personal strain, personal coping resources. The dependent variable was burnout (subcategories: emotional exhaustion, depersonalization, personal accomplishment).

Data were collected by means of a mailed questionnaire. A 92% response was obtained from the first and second mailings. No significant difference was found between early and late respondents. Therefore, the responses were generalized to the entire census.

The mailed questionnaire consisted of six portions. These were: job satisfaction, occupational stress, personal strain, personal coping resources, Maslach Burnout Inventory, and personal characteristics. Each of these instruments has been used with educational administrators and has proven to be valid by either content validity or concurrent validity. Reliability coefficients for the instruments and subscales range from Cronbach's alpha of .71 to .94.

The majority of the vocational supervisors (59.1%) were very satisfied with their jobs. An additional 35.1% were moderately satisfied with their jobs. The majority of vocational supervisors (93.9%) scored in the two lower quartiles, indicating medium to low levels of occupational stress. Role overload and responsibility scores constituted the largest portion of occupational stress. Personal strain did not appear to be a problem for supervisors. The majority of supervisors scored in the highest two quartiles (94.8%), indicating good usage of personal coping strategies.

The majority of vocational supervisors were found to experience moderate to high levels of burnout as measured by the Maslach Burnout Inventory (MBI). These individuals indicated high levels of emotional exhaustion and depersonalization. They also had low feelings of personal accomplishment.

Barrick, R. K., & Doerfert, D. L. (1988). *Teacher and supervisor perceptions of vocational teacher abilities.* (Staff Study). Columbus: Ohio State University.

Objectives stated to guide this study were to (1) determine the perceptions of first-year vocational teachers regarding their knowledge of and ability to apply the 25 competencies of teaching, (2) determine the perceptions of the immediate supervisor of first-year vocational teachers regarding the teachers' knowledge and ability to apply the 25 competencies, and (3) determine the differences between teachers and supervisors regarding the teachers' competencies.

The population for this study consisted of all first-year vocational

teachers and their immediate supervisors for the 1986–87 and 1987–88 school years. A total of 124 teachers and 124 supervisors participated in the study.

Teachers indicated their perceptions of their knowledge of the topic and their ability to apply the knowledge of the topic for all 25 topics on a scale of 1 (low) to 5 (high). Supervisors used the same instrument to indicate their perceptions of the teachers' knowledge and application of that knowledge for each of the 25 competencies. The instrument was assessed to be reliable based on a Cronbach's alpha of .87.

Instruments were mailed in February of 1987 and 1988 to the teachers and their supervisors. A 100% response rate was achieved after two mailings and a follow-up telephone call.

Teachers tended to perceive themselves above the midpoint of the scale on all 25 competencies. With the exception of the competency "advising the vocational student organization," the mean score for each competency was greater than 3 on a 5-point Likert-type scale. Three competencies (preparing lesson plans, teaching safety, and being aware of sex equity) expressed means greater than 4, indicating that teachers perceived their knowledge to be high in these three competencies. Teacher perceptions of their ability to apply their knowledge were similar to their perceptions of their knowledge. Notably, however, on eight of the competencies, teachers perceived their ability to apply their knowledge greater than their knowledge of that competence.

Supervisors indicated perceptions of the teacher's knowledge similar to teachers' perceptions of themselves. Means for the 25 competencies ranged from 2.9 to 4.3. Supervisors tended to perceive teachers' ability to apply their knowledge lower than the teachers perceived their ability. Eighteen of the 25 competencies displayed lower perceptions of supervisors on application ability by teachers.

There was no significant difference between the total knowledge perceived by teachers and the total knowledge score of the teachers as perceived by their supervisors ($p>.05$). No significant difference was found for the total application score of teachers and the total application score indicated by their supervisors.

Boone, D. A. H. (1988). *Correlates of extension personnel performance on the Ohio Cooperative Extension Service Assessment Center.* Doctoral dissertation, Ohio State University, Columbus.

The primary purpose of the study was to investigate the relationships between selected personal and job-related factors for noncounty chairs and performance in the Ohio Cooperative Extension Service Assessment Center as measured by the overall assessment rating. This study also attempted to determine the importance of the independent variables and the assessment center dimensions in predicting the overall assessment rating. In addition, this study sought to compare the county chairs and noncounty chairs groups of assessees.

Based on the findings of the study the following conclusions were reached: (1) noncounty chairpersons have favorable perceptions of the Ohio Cooperative Extension Service assessment center; (2) although satisfied with their jobs, most noncounty chairs are in need of further development before

they can meet normal management expectations for county chair positions; (3) adequate information for use by participants to prepare themselves for their participation in the Ohio Cooperative Extension Service assessment center was lacking; (4) the groups of county chairpersons and noncounty chairpersons differed in the areas of number of years in extension, level of job satisfaction, the extent to which they define their roles toward the attainment of Ohio Cooperative Extension Service goals; (5) experience as a county chair appeared to improve skills in developing coworkers, management control, and improvement of organizational sensitivity; (6) individuals who have served as county chair have a lower level of job satisfaction than noncounty chairs; (7) the county chair group had a higher percentage of agents with major program responsibility in agriculture who had worked for the extension service for a longer period of time than the noncounty chair group of assessees; (8) there were more female noncounty chairs than county chairs, and female noncounty chairs tended to have lower overall assessment ratings than their male counterparts; (9) some relationship existed between an assessee's scores on the dimensions of leadership, perception, and decision making/judgment and their overall assessment rating; and (10) a larger number of county chairs had master's degrees in agricultural or home economics than the noncounty chair group.

Boone, H. N., Jr. (1988). *Effects of approach to teaching on student achievement, retention, and attitude.* Doctoral dissertation, Ohio State University, Columbus.

The purpose of this study was to determine which approach to teaching, problem solving, or subject matter was most effective in teaching high school vocational agriculture students. Effectiveness of approach to teaching (problem solving or subject matter) was measured via student achievement, retention of knowledge, and attitude toward teaching approach.

Based on the findings of the study the following conclusions were reached: (1) after analyzing the audiotapes of the teachers' instruction, the levels of the independent variable, teaching approach, were not administered properly in the study; (2) teachers who use problem-solving instruction on a regular basis in the classroom have a difficult time using the subject matter approach; (3) teachers do not fully use all of the essential elements of the problem-solving approach to teaching; (4) student attitude toward instruction was influenced by both timing of the unit and the instructional approach used by teachers in the study. Students taught with the problem-solving approach first in an instructional series have a higher attitude toward the instruction than students taught first with a subject matter approach. Students taught with a subject matter approach second in an instructional series had a higher attitude toward instruction than did students taught second with a problem-solving approach; (5) the timing of the unit and the instructional approach had a significant effect upon student achievement scores. Students taught with the problem-solving approach first in an instructional series have higher achievement scores than students taught first with a subject matter approach. Students taught with a subject matter approach second in an instructional series had higher achievement scores than did students taught second with a problem-solving approach; (6) the problem-solving approach to teaching and the subject

matter approach to teaching require the same amount of classroom time to complete an instructional unit; (7) the group of teachers recognized by state supervisors and teacher educators as users of problem solving is not accurate.

Bouare, D. (1988). *Perceptions of adult educators regarding the content, delivery systems, and types of farmers served by three young/adult education programs in Ohio.* Master of Science thesis, Ohio State University, Columbus.

The study described the perceptions of the OCES county agriculture agents, the Ohio Department of Education FBPA teachers, and secondary vocational agriculture teachers in regard to the contents, types of farmers served, and delivery systems used in their young/adult farmer educational programs. A sample of 134 educators was randomly drawn from the three groups of adult educators.

The design of the study was descriptive survey research using the mailed questionnaire technique. The data were collected from 104 or 77% of the sampling units.

Based on the findings, the following conclusions were made about the perceptions of the three groups of adult educators: (1) educators in the three young/adult farmer educational programs tended to be similar on several individual characteristics; (2) consistent differences between farmer participants were detected on the basis of the type of educational program; (3) the type of educational program (OCES, FBPA, and vocational agriculture) was not a strong indicator for identifying consistent differences in the respondents' perceptions with regard to the content, types of farmers served, and delivery systems.

Bowen, B. E., & Cooper, B. E. (1987). *A profile of agricultural communications graduates of the Ohio State University.* (Staff Study). Columbus: Ohio State University.

The primary purpose of the investigation was to do a follow-up study of students who graduated from the Ohio State University with a Bachelor of Science degree in agriculture with a major in agricultural communications. Specific objectives were to (1) determine selected demographic characteristics of the graduates; (2) assess the graduates' level of satisfaction regarding their undergraduate courses and selected academic experiences; and (3) assess the graduates' perceptions of courses and academic experiences undergraduates need to be successful agricultural communicators.

Data were obtained by using a mailed questionnaire. Sixty-eight individuals in an accessible population of 119 graduates returned the questionnaire, a 57.1% response rate. The instrument contained a Likert-type scale to assess the graduates' satisfaction with undergraduate courses they took in agriculture, communications, journalism, and basic education and other academic experiences commonly associated with a major in agricultural communications.

The findings of the study indicated that Agricultural Communications graduates tend to be white females who have a bachelor's as their highest

degree. More than half of the graduates earn annual salaries under $25,000. Most of the graduates are employed in business and marketing, public relations, and writing and editing. The Agricultural Communications graduates are very satisfied with their undergraduate courses in agriculture, journalism, and communications. They are less satisfied with their basic education courses. The graduates perceive courses in journalism and communications to be more important than agriculture or basic education courses for future agricultural communicators. The graduates tended to be satisfied with selected undergraduate experiences and perceive such experiences to be extremely important for future agricultural communicators.

Bowen, B. E., Doerfert, D. L., & Horkheimer, D. (1988). *A comparison of computers in agriculture state winners and state winners in selected FFA contests and awards.* (Staff Study). Columbus: Ohio State University.

The purpose of the study was to compare 1984–1986 FFA Computers in Agriculture state winners with proficiency award and public speaking state winners. Comparisons were made on demographic characteristics, FFA activities, academic performance, career goals, and use of computers.

Data were obtained using a mailed questionnaire sent to a stratified random sample of 593 out of a population of 2,950. Three hundred returned the questionnaires, representing a 50.6% response rate. Of the 300, 145 also returned copies of their high school transcripts for the researchers to use in extracting data about academic performance.

Major findings included (1) the Computers in Agriculture award program has tended to attract rural students who resemble traditional vocational agriculture students; (2) demographically, Computers in Agriculture state winners resemble proficiency award winners, but not state-winning public speakers; and (3) occupationally, computers winners do not aspire to agricultural careers. The data also suggest that the Computers in Agriculture program is either (1) attracting a new student to vocational agriculture, or (2) studentsparticipating in the Computers in Agriculture program would take vocational agriculture even though their career goals might not be in agriculture.

Bowen, B. E., & Escolme, K. M. (1988). *Computer education and training needs of Ohio farmers.* (Staff Study). Columbus: Ohio State University.

The purposes of the study were to (1) determine the attitudes of Ohio farmers toward the use of computer technology; (2) develop a discriminant model to distinguish between Ohio farmers who are users or nonusers of computer technology; (3) determine applications being made of computer technology by Ohio farmers; and (4) determine the computer technology and training needs of Ohio farmers.

A stratified random sample of 400 Ohio farmers was chosen for the study from a population of 88,000. Data were obtained using a mailed questionnaire and a telephone interview schedule. At the end of the response period, 204 usable responses had been received by mail, a 51% response rate.

Telephone interviews were then used to follow-up respondents whose questionnaire indicated that they used a microcomputer for farm business applications.

The farmers tended to express positive attitudes about the use of microcomputers on farms. Younger farmers tended to possess a higher level of education and have more favorable attitudes. Nonusers tended to have (1) less favorable attitudes toward microcomputers and (2) smaller farms. Microcomputers were used for farm applications by 19% of the farmers. Efficient record organization was the primary reason farmers adopted computers. Thirty-four percent of the farmers expressed interest in microcomputer training. The preferred training focused on practical management uses rather than specific skill acquisition. Most of the users were self-taught or had received training while in college.

Cano, J. M. (1988). *Assessment of the level of cognition of instruction and student performance in selected production agriculture programs in Ohio.* Doctoral dissertation, Ohio State University, Columbus.

The purpose of this study was to determine the level of cognition of instruction in the classroom being utilized by selected production agriculture teachers from public schools in Ohio. In addition, this study sought to determine the level of cognition at which students in production agriculture classes were performing.

The study was descriptive and correlational. The population consisted of ten purposefully selected production agriculture teachers and their twelfth-grade students.

Using the production agriculture teachers' courses of study, data were collected to determine the level of cognition of instruction. Using a researcher developed written test, data were collected to determine the student level of cognitive performance. A panel of experts established content validity of the written test used, and reliability was established using the pilot test procedure.

The results of this study indicated that teachers devote approximately 9% of the instructional time to leadership instruction, 16% to crop production, 18% to animal science, 41% to agricultural mechanics, and 17% to farm management.

The distribution of instructional objectives across levels of cognition was 31% remembering, 38% processing, 19% creating, and 12% evaluating.

Significant differences were noted between grade levels (9, 10, 11, and 12) by the percentage of instructional objectives written at the various levels of cognition. No significant trends existed in these differences.

Student performance was reflected by percentage of questions answered correctly at each level of cognition. The distribution of percentages was: remembering, 64%; processing, 55%; creating, 40%; and, evaluating, 28%.

The relationship between the level of cognition of instruction and the student level of cognitive performance was significant. Intercorrelations indicated that higher percentages of teachers' instructional objectives classified as remembering, processing, creating, and evaluating were accompanied by lower test scores of students on creating and evaluating test items and higher test scores on remembering test items.

Christmas, O. L. (1987). *Factors influencing the occurrence of and the level of participation in adult agricultural programs.* Doctoral dissertation, Ohio State University, Columbus.

The objectives of the study were to investigate (1) the relationship between the occurrence of a supplemental (part-time) adult agricultural education program (adult agricultural program) and selected variables, and (2) to investigate the relationship between the level of participation in an adult agricultural program and selected variables. The dependent variables were the occurrence of an adult agricultural program and a level of participation in an adult agricultural program.

The population consisted of high schools in the state of Ohio that had a secondary vocational agriculture program in agricultural production or farm business management during the 1985–86 school year. Twenty-six schools with an adult agricultural program and 20 schools without an adult educational program were used in the analysis.

Three demographic variables were significantly related to the occurrence of an adult agricultural program. These variables were (1) the recent adult teaching experience of the vocational agriculture instructor, (2) the number of years the instructor had taught adults, and (3) the recent instruction in teaching or administering an adult program received by the principal. The number of vocational agriculture instructors in a school was significantly related to the occurrence of an adult agricultural program. Schools without an adult agricultural program had significantly higher numbers of high school vocational agriculture instructors than schools with an adult agriculture program. Schools without an adult agricultural program were more likely to have instructors who perceived that the adult clientele should pay a fee for participating in the adult program. The general finding was that the variables investigated did not explain the level of participation in the adult agricultural program. Further research was recommended to identify, investigate, and develop an empirical basis for the basic tenants of adult education that are so often espoused.

Elliot, J. (1988a). *Antecedents of training-related placement for vocational agricultural students.* (Staff Study). Columbus: Ohio State University.

The Carl D. Perkins Vocational Education Act of 1984 requires evaluation in terms of how well occupational training reflects actual state labor market conditions and the hiring needs of employers. To assess the impact of this policy orientation, one must understand the effects of obtaining a job related to one's training and the individual characteristics and/or conditions of the environment that influence the rate of training-related placement.

The specific objectives of the study were (1) to provide detailed information on the rates of training-related placement for vocational agriculture graduates and how they compared to other vocational areas in the years immediately following high school; (2) to provide information on the environmental conditions and personal characteristics associated with training-related placement; and (3) to examine the impact of training-related placement on the earnings of vocational education graduates.

The data were derived from two national longitudinal databases, High

School and Beyond (HS&B) and the National Survey of Labor Market Experience-New Youth Cohort (NLS). These databases provided a nationally representative sample of young people at a time in their lives when they were making major career and educational decisions.

A comparison between the first job after high school and the current or most recent job revealed that the training-related rate was about 42%. Vocational agriculture graduates displayed the largest increase in training-related employment from 40% to 49%. Graduates of high school vocational programs were more likely to accept and spend a higher proportion of time in jobs related to their training if their vocational studies were concentrated in a single specialty such as vocational agriculture, they earned high grades in their vocational specialty, or they aspired to be in occupations related to their training. A positive effect on earnings for vocational education graduates was confirmed for those in training-related jobs.

The low rates of training-related placement suggest that vocational programs are not adequately preparing graduates for jobs in the existing labor market, that young people are not using vocational education to prepare for related jobs, or that forces operating in the labor market are preventing them from capitalizing on their training. Policymakers may wish to explore ways to improve the rates of training-related placement or reconsider training-related placement as an evaluation criterion of vocational programs.

Elliot, J. (1988b). *Factors related to the decisions of rural high school students to participate in vocational education.* Doctoral dissertation, Ohio State University, Columbus.

The purpose of this study was to identify the factors related to the decisions of rural high school students to participate in vocational education. Specifically, the reasons why rural public high school students enrolled in vocational education courses were determined.

Two national longitudinal data bases, High School and Beyond (HS&B) and the National Survey of Labor Market Experience-New Youth Cohort (NLS), provided the bases for the regression analyses. In addition, a face-to-face interview and a questionnaire which replicated questions from the national longitudinal surveys were administered to a randomly selected sample of Ohio students who planned to enroll in vocational education courses in their junior years.

Rural individuals who completed higher proportions of vocational education were more likely to score lower on achievement tests and be from lower SES families than those graduates who completed lower proportions of vocational education. Some motivational variables, such as membership or a leadership position in a vocational youth organization, participation in vocational work experience programs, the desire to work in a vocational job at age 35, and no aspiration to pursue postsecondary education surfaced as being associated with graduates who completed higher proportions of vocational education.

The rural sample in Ohio was white. Students enrolled in vocational education courses at home comprehensive schools felt a sense of belonging. Few people not associated with Joint (Area) Vocational Schools (JVS) spoke highly

of them. In addition to the clustering of vocational students in lower SES and ability quartiles, further clustering occurred within vocational education. When compared to home school vocational students, students attending JVS's were significantly lower in ability and SES.

Job preparation ranked as the number one reason (58%) why Ohio students enrolled in vocational education courses. Enjoyment of vocational subject matter and the environments in which the vocational education courses were taught ranked second (52%). Other reasons to enroll in vocational education courses included personal reasons, monetary benefits, perceived ease of grades, attraction of affiliated youth organizations, preparation for education beyond the secondary level, positive prior experiences with vocational teachers, and contacts with individuals in vocational trades.

Escolme, K. M. (1988). *Cognitive style of international and domestic graduate students in Agricultural Education and Agricultural Economics.* Master of Science thesis, Ohio State University, Columbus.

The purpose of this research was to describe the educational background of international students and to describe relationships between nationality, gender, academic major, and cognitive style of graduate students in two selected departments. The Group Embedded Figures Test (GEFT) was used to as a measure of cognitive style (n = 80). Interviews were conducted with eight international students. Major conclusions were: (1) There was a statistical difference between cognitive style of U.S. and international students. (2) U.S. and Asian students tended to be more field independent. South American students showed most field dependence. (3) International female students showed more field independence than U.S. female students. (4) International males majoring in Agricultural Education were statistically more field dependent.

Gerhard, G. W. (1988). *Factors associated with mastery of the 4-H professional research and knowledge base by extension agents, 4-H in Ohio.* Doctoral dissertation, Ohio State University, Columbus.

The purposes of this study were to describe extension agents, 4-H in Ohio, regarding fourteen critical events in their academic, professional, and personal lives related to knowledge acquisition; to describe the same agents regarding mastery of the 4-H Professional Research and Knowledge Base (4H PRK); to determine the degree of association between the mastery scores of 4H PRK, between the fourteen characteristics, and between the mastery scores and the fourteen critical events; and, to determine the best predictors of overall mastery of 4H PRK from among the fourteen factors. The factors were highest academic degree, type of academic degree, quarter hours of coursework related to 4H PRK, the degree-granting institution, grade point average, years as an extension educator, years as a 4-H extension agent, county chair status, perceived influence of paid nonextension work, volunteer, and personal study experiences, number of years a 4-H member, number of children of 4-H age, and gender. The dependent variable was score on the 4H PRK Mastery Test.

This study was *ex post facto* and descriptive-correlational. All 66 extension agents, 4-H or the Ohio Cooperative Extension Service, were submitted 4H PRK Mastery Tests and Background Information Sheets to collect perceptual data. A review of transcripts and employment records was completed to obtain academic and tenure data. A final response rate of 62% was obtained.

Over half of all degrees held by the agents are in either technical disciplines or agricultural education. Twenty-one percent of the degrees were taken in the social sciences, 7.3% in home economics education, and 2.5 in dual technical/agricultural education majors.

Agents' performance on the 4H PRK Mastery Test averaged 60% correct. Performance was similar on subtests measuring communication, youth development, youth program management, and educational design. The knowledge field wherein the agents displayed greatest proficiency was volunteerism.

No substantial or very strong correlations were identified between the fourteen factors and 4H PRK Mastery. Stepwise multiple regression identified cumulative postsecondary grade point average as the only significant variable loading on 4H PRK. GPA accounted for 11% in the variance of 4H PRK Mastery.

Gliem, J. A., & Elliot J. F. (1988). *Problem-solving skills of agricultural education undergraduates when completing mathematical word problems in agricultural mechanics.* (Staff Study). Columbus: Ohio State University.

The purpose of this study was to investigate the problem-solving skills in mathematical word problems in agricultural mechanics of undergraduate agricultural education students enrolled in an advanced level laboratory teaching methods course (Agricultural Education 531) and College of Agriculture undergraduate students enrolled in a beginning level applied mechanics course (Agricultural Mechanization and Systems 110). Relationships between students' problem-solving skills and other ability measures were also examined.

Undergraduate agricultural education students and College of Agriculture undergraduate students in this study were not competent in solving mathematical word problems in agricultural mechanics.

The undergraduate agricultural students completed more high school math, physics, and chemistry courses then the undergraduate agricultural education students and answered more items correctly on the mathematical word problem test in agricultural mechanics, but both groups performed at unsatisfactory levels.

The fifteen undergraduate agricultural education students completed more university math, chemistry, physics, and agricultural mechanics courses than the thirteen undergraduate agricultural students, but scored lower on the mathematical word problem test in agricultural mechanics.

ACT composite scores were the best predictors of students' scores on the agricultural mechanics mathematical problem-solving test.

Gliem, J. A., & Hard, D. L. (1988). *Safety education and practices in agricultural mechanics laboratories: An asset or liability.* (Staff Study). Columbus: Ohio State University.

This study investigated the extent to which teachers of production vocational agriculture complied with accepted safety practices in agricultural mechanics laboratories.

This study utilized a previously developed survey instrument to measure compliance or noncompliance on 120 different safety practices grouped within 10 major safety areas. The safety practices were identified from Occupational Safety and Health Act (OSHA) requirements that would impact upon high school agricultural mechanics laboratories and other safety requirements that had been identified by a panel of agricultural mechanics teacher educators. Reliability was established using Cronbach's Alpha with an overall instrument reliability of .93. The reliability of individual sections of the instrument ranged from .46 to .88.

The survey instrument, with a letter explaining the survey and why it was being conducted, was sent to a random sample of 50% of the high school production agriculture departments in Ohio (N=182). Three mailings were conducted with follow-up letters sent after each mailing. One hundred forty-four (144) surveys were returned, which equals a 79% response rate. Early respondents were compared to late respondents with no significant differences found.

No schools were in compliance in all safety areas. The frequency of compliance in individual safety areas ranged from a low of 1% of the schools on personal protective equipment to a high of 56% of the schools in the compressed air equipment safety area. It was concluded that accepted safety practices are not being practiced in high school agricultural mechanics laboratories.

Hale, C. S. (1988). *Ohio pork producers' opinions concerning the 100% pork checkoff program.* Master of Science thesis, Ohio State University, Columbus.

The 100% pork checkoff program was established by federal legislation through the Pork Act of 1986. This program requires all producers and importers marketing hogs or pork products to contribute .25% of the selling price of the hogs to the checkoff program. In September 1988, a referendum will be held to determine whether the current checkoff program is continued or discontinued. This study was designed to measure the opinions of Ohio pork producers on aspects of the current checkoff program. It was concluded that a majority (73.4%) of Ohio pork producers support the continuation of the 100% pork checkoff program.

Hedges, L. E., & Christmas, O. L. (1988). *Factors influencing the level of motivation toward school of high school seniors enrolled in vocational agriculture (Phase III).* (Staff Study). Columbus: Ohio State University.

The purpose of this study was to investigate the factors that could

influence the level of motivation toward school of high school seniors enrolled in secondary vocational agriculture. The specific objectives were to (1) describe the sample of vocational agriculture students, their level of motivation, the teachers' perceptions of the students, and selected demographic information; (2) determine the relationship between the students' level of motivation and vocational agriculture teachers' perceptions of the student and selected demographic variables; and (3) establish whether a combination of the independent variables could be used to predict the students' motivational score.

The data were obtained as a part of a three-year research effort. The population for this portion of the three-year study consisted of selected senior students enrolled in secondary schools and joint vocational schools in the northwest section of the state of Ohio. These selected senior students were the original population of the three-year study and were originally enrolled in sophomore production vocational classes in the high schools comprising the vocational education planning districts of Penta County JVS, Four County JVS and Vantage JVS. Data measuring the dependent variable, level of motivation toward school, were collected by the Junior Index of Motivation instrument.

Of the 164 students, 146 (89%) were males and 18 (11%) were female. Eighty-two percent of the students were in a high school based vocational agriculture program, and 18% were enrolled at a joint vocational school (JVS).

The degree of association between sex, family status, mother's and father's employment, and the type of school attended when compared to the level of motivation were all low or negligible. The relationship between socio-economic level, mother's educational level, father's educational level, and age when compared to the level of motivation were negligible and not significant. The correlation coefficients for the level of motivation and the teacher's perceptions of the students ranged from .17 to .36, indicating low to moderate relationships. Stepwise multiple regression failed to identify a combination of the independent variables to predict the motivation level of the students.

Little, E. M. (1988). *A qualitative investigation of adolescent Ohio 4-H members' perceptions of encouragers and barriers in 4-H.* Master of Science thesis, Ohio State University, Columbus.

The purpose of this study was to explore the factors that influenced adolescent participation in voluntary educational programs, specifically 4-H. The subjects were older 4-H members (aged fourteen to nineteen years) from four Ohio counties. The focus group interview was used as the method of data collection.

There were many perceived benefits and barriers to participating in 4-H. The major benefits were learning skills, good sportsmanship, responsibility. The opportunities for older youth were viewed as a benefit as well. Family and peers were also influential in the decision to stay in or drop out of 4-H. The major barrier to continuing to be a 4-H member was the other activities in which the older youth were involved. Unchallenging 4-H projects were also perceived as a barrier to participation. Some factors such as competition, teaching younger members, and parental involvement were found to be both a barrier and encourager, depending on the perception of the individual members.

McCracken, J. D., & Miller, C. (1988). *Rural school teachers' perceptions of their schools and communities.* (Staff Study). Columbus: Ohio State University.

Perceptions of rural secondary teachers about the role of the public school in rural communities were described. Answers were sought for several questions. How do teachers perceive their roles in the rural community? What factors help or hinder the teachers in fulfilling their roles? How do the community and school interrelate? What are the expectations of the community for its teachers? Qualitative research methods were used to interview teachers and summarize the results of the interviews. Results indicated that most teachers preferred the rural school as a place to work; some teachers found it difficult to adapt to the traditional rural community structure; administration was somewhat informal; assistance with extracurricular activities was expected; second jobs were held by many; and many failed to recognize the importance of agriculture in the economy of the rural community.

Miller, L. E. (1988). *Perceptions of the Future Farmers of America as held by significant others.* (Staff Study). Columbus: Ohio State University.

This study determined the image of the FFA as held by 15 groups of persons, ascertained certain demographic information on these groups, and determined the relationships between the demographic characteristics and their image.

Survey research methodologies were employed with multistage random sampling procedures. The initial sampling unit was states from the FFA regions. Valid and reliable instruments were used to collect data on the image of leadership development, members, general attitude, traditions, and rituals, future career preparation, relationship between FFA and vocational agriculture, contests, and image of advisors.

The overall image of the FFA was very positive. Data revealed that this was so for each of the domains of image investigated. Persons closer to the organizations tended to have more positive images, and they tended to more closely define the linkage between FFA and vocational agriculture. While some differences were found among the groups and characteristics examined, one group was just more positive than the other. The study defined what the image was and not necessarily what it should be. Those who purport the organization to have a negative image were found to be speaking from a minority perspective.

Miller, L., Jacobs, R., & Shibano, G. (1988). *The training and research requirements of agribusiness training and development professionals.* (Staff Study). Columbus: Ohio State University.

This study ascertained the research skills needed by agribusiness training and development professionals, their importance, and training needs. The relationship between selected personological and business characteristics and the needs were also determined.

The population was all members of the Agribusiness Interest Group

(AIG) of the American Association of Training and Development (ASTD), with the frame produced from their membership roster. Mailed questionnaires were used to all 105 members. A follow-up of nonrespondents was used. Valid and reliable instruments were developed.

Of the 44 items, 9 received discrepancy scores, which indicated that the means of the perceived importance was greater than the mean of the perceived ability to perform research skills. Wide variation existed on the perceived importance and knowledge in the area, which was not explained by the number of years or the level of education of the respondents. The responses from AIG members are similar to those expressed by other ASTD members.

Piper, F. E. (1987). *Ohio county extension agents current use, training, and perception of the utility of digital microcomputers.* Master of Science thesis, The Ohio State University, Columbus.

Survey research was conducted to assess the current use, attitudes toward, training received, and perceptions of future problems of digital microcomputers at the county Cooperative Extension Service offices.

Of the 135 respondents, 77% received training with Agricultural agents receiving three-day training and the Home Economic agents preferring the 1/2 day training. Agricultural agents, males, and younger agents tended to have more favorable attitudes toward microcomputers. The lack of training, software, and equipment were the three highest rated future problems. The digital microcomputer average use was four times per week.

Rennekamp, R. A. (1987). *The relationship between selected antecedent characteristics and perceived educational needs of extension agents with 4-H youth development responsibilities.* Doctoral dissertation, Ohio State University, Columbus.

The purpose of the study was to develop a nationally generalizable descriptive profile of professional Extension agents who devote time to 4-H and to determine the relationships between selected antecedent characteristics and the dependent variables, perceived importance of 25 key skills in 4-H youth development work, and in-service education needed in those key areas. Antecedent characteristics examined included highest academic degree received, academic major in the highest degree, length of service, role perception, percent of professional time devoted to 4-H membership, and manner in which the 4-H responsibility was received.

This study was descriptive-correlational. Multistage random sampling was used to select 371 county Extension agents from eight states to participate in the study. A mail questionnaire was used to collect data about the population studied. The questionnaire was pilot tested in the state of Kentucky to establish the reliability of the data produced.

Hierarchical procedures of multiple linear regression were used to determine the proportion of variance in the dependent variables attributable to variance in the eight antecedent characteristics.

Over 80% of all Extension agents nationwide, devote at least some time

to 4-H programming. Of those who do, nearly 60% had received a master's degree or higher with education (including agricultural and home economics education) being the most frequent major in the highest degree. Nearly 60% of agents devoting time to 4-H had been 4-H club members as youth. Over 90% of agents devoting time to 4-H either accepted the responsibility by choice or had always had 4-H responsibilities.

Home economics and education majors tended to view the 25 key skills as being of more importance than did agriculture or natural resource majors. Similarly 4-H and home economics agents viewed the importance of the 25 key skills more highly than did agriculture or community resource development agents devoting time to 4-H. Only program area of primary responsibility accounted a significant proportion of variance in 4-H educational in-service need.

Rossetti, R. (1988). *Factors that influence a student not to enter into a high school vocational curriculum.* (Staff Study). Columbus: Ohio State University, Southwest Ohio Region Education Personnel Development Center.

The purpose of this study was to investigate factors that influence a student not to enter a high school vocational curriculum. The population was 633 nonvocational, 11th grade high school students in Southwest Ohio. Five schools were selected at random. The study was conducted using descriptive survey research methods. Data was collected by use of a student questionnaire, school questionnaire, and parent interviews. The results showed that 46% of the thoughts students held toward vocational education were positive, 43% were negative, and 11% were neutral. The most frequent reason that students did not enroll in vocational education was that students felt schools did not offer anything of interest. Another popular reason was that students felt that vocational education does not prepare them for college. With regard to students images of vocational schools, 31% were positive, 49% were negative and 20% were neutral. Students were more negative about vocational schools than about vocational education in general. Students indicated that their mother/female guardian was the most influential person in making a decision to not enroll in vocational education or vocational schools.

Sixty-four percent of the students indicated that they had toured a joint vocational school. Student characteristics (sex, curriculum choice, race, and socioeconomic status) were correlated with images of vocational education. It was found that the more negative images were held by a white male in a college preparatory program with a high socioeconomic status.

It can be concluded that there are positive, negative and neutral images about vocational education and vocational schools. The negative and neutral images need to be addressed through improved marketing efforts. Many of the students indicated that they had never thought about enrolling in vocational education. Efforts at orienting students to opportunities in vocational programs need to be increased. Orientation and career exploration should be increased in elementary and middle schools. Vocational programs may need to be modified in order to accommodate the student who is college bound.

Van Tilburg, E. (1988a). *A comparison of advantaged and disadvantaged populations of adult learners using the expectancy-valence paradigm of motivation and adult learner participation.* (Staff Study). Columbus: Ohio State University.

The expectancy-valence model of human motivation (Vroom, 1964) guided the study which used a two-step data collection process. Qualitative interviews with a sample (n=30) of the population (Ohio Cooperative Extension Service clientele) followed by a mail survey (n=299) were used to measure barriers and encouragers to participation and persistence as well as outcomes of and satisfaction with the participation.

Using multivariate analyses and factor and cluster analysis, data were generated to determine the answers to the following research questions: 1. Are barriers and encouragers different for the process of participation versus persistence? 2. Are barriers and encouragers different for demographically different populations? 3. Are certain barriers/encouragers related to specific outcomes of participation? 4. Are certain barriers/encouragers related to the level of satisfaction with participation?

Results showed that barriers and encouragers related to participation and persistence were essentially the same. Disadvantaged clientele experienced different barriers and encouragers than advantaged clientele. Low to substantial correlations were found relating barriers, encouragers, outcomes, and satisfaction with participation. The best predictors of satisfaction were self-improvement outcome, anticipated problems with arrangements for participation, satisfaction with the teacher, and negative experiences outcome. (Regression model: $y = .234 + .139x_1 + .062\ x_2 + .062_3 - .069x_4$).

Van Tilburg, E. (1988b). *Literacy students' perceptions of successful participation in adult education: A cross-cultural approach through expectancy valence.* (Staff Study). Columbus: Ohio State University.

The purpose of this study was to address the issue of literacy in developed countries by investigating participants in two purposefully selected adult basic educational programs: one located in the United States, the other located in Great Britain.

Using a model based on the expectancy-valence theory of human motivation proposed by Van Tilburg in an earlier study, this research focused on the perceived barriers and encouragers to participation and persistence in adult basic education. Research questions addressed types of encouragers and barriers, past and present experiences and expectations related to formal education, and perceived changes within the individual as a result of participation and persistence.

Selected students enrolled in an Adult Basic Education/General Equivalency Diploma program in Columbus, Ohio, and students enrolled in one of four adult education programs leading to examinations for certification conducted by the Inner London Education Authority, London, England, were interviewed during the time period April-June 1988. The interview schedule used open-ended, yet structured questions, to gain insight into the experiences, feelings and perceptions of the students. A total of 58 individuals participated in the study. Data from the interviews, which lasted one to two hours each,

were analyzed using a scissor and sort method for qualitative data analysis.

Both dominant trends and unique characteristics were noted as students' reflections on past, present, and anticipated future experiences with education were assessed. Major themes in the data related to "school memories," "reasons for leaving school," "encouragement to begin," "reasons why I shouldn't be here," "doing it for me," "teachers," and "self-talk." Differences between British and American students were quite evident in some specific areas.

Implications for the scientific community relate directly to the use of a qualitative data collection method to investigate such a vital topic as literacy as Chall, Heron, and Hilferty in their 1987 study have suggested. The model performed well in the guiding of this study and holds promise to future investigations of participation and persistence in any adult learner population.

Implications for practitioners may be more evident in a study such as this, because very specific information, with in-depth explanation to aid in understanding, can be used immediately in the practice of adult literacy education. Administrators of the programs included in this study are already using interim data reports to make changes in their programs.

Vogt, B. T. (1988). *Ohio Cooperative Extension service agents perceptions of the agent rating method of the performance appraisal system.* Master of Science thesis, Ohio State University, Columbus.

The purpose of this study was to determine the satisfaction level of Ohio Cooperative Extension county agents with a new agent performance peer rating method, and to determine any change in faculty satisfaction with the office relationships. Variables included faculty position (agent, chairman), gender, age, and program area combinations, stable office membership, performance rating preference, strengths and weaknesses of the new rating method, satisfaction with the new method, and the change in satisfaction with the office relationship.

Data were gathered from 125 faculty with a mail questionnaire during Autumn 1987. No relationships were found between the gender, age, and program area combinations and satisfaction with the rating method. Chairmen were significantly more satisfied with the new method than were agents. Satisfaction with the office relationship decreased for agents, but increased for chairmen. Satisfaction with office relationships was positively related to faculty satisfaction with the new method.

OKLAHOMA

Alba-Rojo, J. L. (1988). *Impact of federal development programs and farmers' educational and technological status on agricultural production within the ejido system in Chihuahua, Mexico.* Doctoral dissertation, Oklahoma State University, Stillwater.

The purpose of the study was to determine the influence of federal development programs on agricultural production under monitored educational and technological conditions in the ejido system as the largest land tenure sector in Chihuahua, Mexico. The study sought to identify predictable situations through which the delivery of federal development programs could be of greater value for increasing agricultural production. The population of the study consisted of all the farmers in ejidos in the state of Chihuahua at the time of data collection (1984–85). A ten percent random sample of the ejidos in Chihuahua state was selected. An additional sampling stage was conducted to select farmers in the selected ejidos through the lottery method by using updated lists of farmers in each sampled ejido. A two-part measurement instrument was designed to gather the data for the study by utilizing open-ended devices as well as highly structured Guttman type scales.

The findings revealed that on the average, farmers in modern communities or ejidos had higher farm incomes than farmers in more traditional villages. The variable, formal education, was found to have the strongest impact on farm incomes within this land tenure system. The impact of the federal development programs was significant only in the subsistence villages. Finally, although the variable, federal development programs, treated as indicator variable was not a good predictor variable, the research evidence led the author to conclude that socially oriented program inputs appeared to have greater influence than economic and technologic program inputs in low-production and capital-intensive environments.

Brannon, T. L. (1988). *Impact of vocational agriculture/FFA on community leadership in Oklahoma.* Doctoral dissertation, Oklahoma State University, Stillwater.

This study included 369 community leaders from 30 randomly selected communities in Oklahoma that had schools containing vocational agriculture departments. The study was stratified to include six communities from each of the five districts in Oklahoma. There were five communities with single teacher departments and one community with a multiteacher department represented in each district. The leaders were identified by a combination of the positional and reputational methods. The positional method was used to identify the most widely recognized leader in nine different sectors of each community — agriculture, business, communications, education, government, industry, professional, religion, and social. These leaders were in turn asked to identify additional persons whom they considered to be community leaders. The results of those two methods were used to develop the list of community leaders included in the study.

Vocational Agriculture/FFA was found to have had an impact on the success

of many community leaders. Almost half of the leaders surveyed were past participants in Vocational Agriculture/FFA and they felt that their leadership experiences were effective in developing their leadership skills, contributed much to their success, and have been of value in their careers regardless of occupation. In addition, twenty percent of the leaders who were not enrolled in vocational agriculture indicated that it had contributed to their success. Past vocational agriculture students were found generally to be more actively involved in community organizations and activities than nonparticipants. A majority of the leaders were middle-aged white males, had obtained at least a B.S. degree, and rated their college and high school experiences as important factors in their success.

Cox, C. B. (1988). *Identification and comparison of factors influencing Oklahoma Cooperative Extension Service agents to remain in the profession.* Master of Science thesis, Oklahoma State University, Stillwater.

During November 1986, a questionnaire was mailed to all 215 Oklahoma Cooperative Extension Service field staff employees in the 77 counties of Oklahoma. The major objective was to measure the levels of influence that selected factors had on agent retention. Agents were asked to respond on a five-point Likert-type scale, to 33 selected factors, dealing with three major areas; Job Related Factors, Personal Opportunities, and Family Opportunities. The data were tabulated and comparisons were made by three major program areas: Agriculture, Home Economics, and 4-H. Comparisons were made between program areas, between years of service groups, and between years of service groups within the program areas. After tabulation, the mean responses were ranked and notable differences were recorded for those factors with mean values with .50 or greater differences.

Each of the three program area groups consistently ranked "the desire to work with people" and "creative job freedom" as the first and second most important factors affecting agent retention. Agents consistently ranked intangible factors such as service to clientele higher than they ranked tangible factors such as salary or working hours. Personal Opportunities and Family Opportunities were ranked lower than were Job Related Factors, based upon mean values. Of the Personal Opportunities, "leave benefits," "retirement benefits," and "job benefits" ranked higher than did other factors in the category. Those factors in the Family Opportunities section of the questionnaire consistently ranked low among the groups, with "individual or family involvement in the community," and "community or county ties" being the highest ranked factors in the category, being of moderate value.

Grubb III, S. L. (1987). *Effectiveness of county sharing cooperative extension personnel assignments as perceived by Oklahoma Cooperative Extension agents.* Master of Science thesis, Oklahoma State University, Stillwater.

A major purpose of this study was to obtain and analyze perceptions of county sharing cooperative extension personnel relative to the effectiveness of county sharing assignments. In total, 18 cooperative extension personnel had

county sharing assignments. Of the 18, all, or 100% responded to the survey. The investigation sought to determine (1) economical aspects of county sharing (2) whether or not clientele needs were being met as a result of county sharing, and (3) the effectiveness of planning and conducting programs using this county sharing concept.

The respondents revealed the county sharing concept was effective. It was evident that all respondents perceived the program planning committees, county advisory councils, and community leaders were effectively being used by county sharing cooperative extension personnel. It was further evidenced that the use of multi-county educational programs was effective. County sharing cooperative extension personnel were effective concerning time spent organizing and managing resources. A particularly notable finding and conclusion was that most of the respondents perceived that clientele needs were being met and that the quality of the Oklahoma Cooperative Extension Service had remained the same or had improved as a result of county sharing personnel assignments. It was further evidenced that the respondents perceived that they would rather work more than one county but only one or two program areas.

Larkin, R. L. (1988). *4-H members', parents', leaders' and agents' perceptions of 4-H competitive events in three urban central Oklahoma counties.* Master of Science thesis, Oklahoma State University, Stillwater.

During April 1988, a questionnaire was mailed to a group of 330 members, parents, leaders, and agents in Canadian, Cleveland, and Oklahoma Counties. The major objective was to measure their perception of 4-H competitive events. The numbers sampled were: fifty random sampled 4-H members from each of the three counties; 50 random sampled parents from two counties, 37 random sampled from the third county. Forty-seven organizational leaders and six 4-H agents from the three counties were sampled. The selection of members and parents was made from the sign-in sheets from the competitive events in each of the counties. Every third person was selected. In one county there were only 37 parents signed up. Therefore, the 37 available were used from that county. All of the agents and organizational leaders were used from all counties due to the small numbers. The group responded to a five-part survey. The parts were the educational value they would place on selected 4-H competitive events; their opinions regarding the relationship between competitive events and 4-H projects; their perception according to the degree of educational value they felt competitive events have on everyday life of the 4-H member; and if the events should be continued at present practice, revised or discontinued. The data were tabulated for the groups together and separately for each of the four groups.

The data revealed that all respondents felt that competitive events were valuable. Even the events that were ranked lowest were still found to be of "average" educational value. Competitive events were found to provide educational value for members especially in leadership and citizenship. There was a consensus that competitive events help members in their everyday lives. Responding groups felt strongly that competitive events provide additional information for members' projects and encourage younger members to take part in new projects. There was little difference of opinion among responding

groups concerning present practices of conducting competitive events for 4-H members. Comments noted that some of the events need revision.

Layton, M. J. (1988). *A follow-up study of Agricultural Education graduates at Oklahoma State University: 1980–1987.* Master of Science thesis, Oklahoma State University, Stillwater.

This study was conducted to collect information concerning graduates of Agricultural Education at Oklahoma State University from 1980-1987. There were 203 respondents to the questionnaire concerning their occupations since receiving their bachelor degrees at OSU. Objectives of this study were to identify the areas of employment, the salary ranges upon graduation and at present, assess the degree of job satisfaction, and to identify individuals who influenced graduates to pursue a degree in Agricultural Education.

After graduation most of the graduates taught Vocational Agriculture and as of October, 1987 many of the graduates were still teaching. The mean beginning salaries of all graduates of Agricultural Education fell into the $16,801-$19,200 range. The mean income for all Agricultural Education graduates as of October 1987 fell within $19,201–$21,600. The income for those teaching as of October, 1987 averaged in the $24,001-$26,400 range. It was apparent that Agricultural Education majors found their career choices to be to their satisfaction. It was concluded that if given another opportunity Agricultural Education majors would choose the same profession and career. It was found that vocational agriculture teachers had the greatest amount of influence on Agricultural Education graduates' career choices.

Rodriquez, O. J. (1988). *Perceptions of extension's role in economic development education in southeast Oklahoma.* Master of Science thesis, Oklahoma State University, Stillwater.

The purpose of this study was to determine the role of Cooperative Extension in Economic Development Education in Southeast Oklahoma. A purposive sample from a population of elected and appointed government leaders was selected. The purposive sample consisted of the County Extension Directors, Chairpersons of the Board of County Commissioners and Excise Board Chairpersons from each of the 19 counties in the Southeast Administrative District. Forty-two individuals participated in the study, 37 males and 5 females, of which 17 were county extension directors, 10 county commission chairpersons, and 15 county excise board chairpersons. The twenty-seven item survey instrument included statements that solicited forced responses as well as short answers. Descriptive statistics were utilized to determine frequency distribution, percentages, rank orders, and arithmetic means. Questionnaires were mailed to 55 individuals during late November 1987.

Forty-six percent of the respondents were concentrated in three age groups, which collectively ranged from 36 to 56 years. Government grants were the type of investment perceived by the three groups of respondents to be most favored by citizens in the Southeast District. Slightly over 41% of the

respondents perceived that "public apathy" was a constraint concerning the acceptance of economic development education programs. Approximately 53% of the respondents believed "Chamber of Commerce" groups would be the best support group for extension's role in economic development education. The most appropriate method for providing viable input in economic development education was of educational programs. Leadership training should be an objective of Cooperative Extension in assisting those who have an interest in economic development to obtain the skills necessary.

Terry, H. R., Jr. (1988). *Program emphasis of vocational agriculture departments in urban influenced areas of Oklahoma.* Master of Science thesis, Oklahoma State University, Stillwater.

The major purpose of this study was to describe what the characteristics of vocational agriculture departments in urban-influenced areas should be. The amount of emphasis that should be placed on selected aspects of the total vocational agriculture program were also evaluated. All 45 vocational agriculture instructors at 32 schools which were defined as "urban influenced" were administered a questionnaire. On each of the 58 statements, the population was to indicate the amount of emphasis which they felt should be placed on that subject.

It was found that vocational agriculture teachers from urban-influenced areas of Oklahoma believe that the total program should be emphasized. Specifically, teachers indicated that extreme emphasis should be placed upon all students being members of the FFA and the participation by these FFA members in locally and state sponsored leadership activities. A rating of great emphasis was placed on the instruction of traditional agricultural competencies and the need of all students to have a SOE training program. In addition, involvement in all types of placement, ownership production, and nontraditional SOE programs should receive great emphasis. Education in nontraditional competencies and participation in nationally sponsored FFA activities should receive much emphasis according to teachers of urban-influenced vocational agriculture departments.

Walker, S. P. (1988). *The nature and status of vocational horticulture as perceived by vocational agriculture teachers in the State of Oklahoma.* Master of Science thesis, Oklahoma State University, Stillwater.

During March 1987, a questionnaire was mailed to 31 vocational horticulture programs in Oklahoma. The objectives were to define the nature and status of vocational horticulture and determine the elements that are common to a typical horticulture program in vocational agriculture. Instructors were asked to respond to a questionnaire that contained "yes" or "no," short answer and rank order type questions. The data was tabulated and comparisons were made of the five districts in Oklahoma. After tabulation, the responses were ranked and noticeable differences were recorded.

The five districts of vocational horticulture programs were defined as district, enrollment, FFA membership, and credit hours offered. Instructors

were asked about greenhouse size and number, acreage of vegetable and nursery production, and kind of horticulture curriculum offered. Vocational horticulture programs exist in all five districts. There is a wide range of enrollment; however, dual enrollment is much less than total enrollment. The respondents reveal that credit hours taught range from one to eight credits. A majority of the instructors had greenhouses that were 901 square feet or more. A noticeable find was that nursery production acreage for instruction was only in two districts, whereas vegetable production acreage for instruction was in all five districts. It was evident that the Oklahoma Core Curriculum was highly used by the instructors with eight of nine skilled area ranking high importance. In the skill area of other teaching material, a large majority were ranked medium importance or higher.

PENNSYLVANIA

Dell, J. C. (1988). *Cantaloupe treatment, freezing and storage study.* Master's paper, Pennsylvania State University, University Park.

The purpose of this study was to identify processing, freezing and storing procedures applicable to commercial use of cantaloupe balls. Cantaloupe is mainly marketed as a fresh product with a small amount processed and marketed as melon balls. The development of stable cantaloupe balls would expand the marketing season.

Fresh market maturity cantaloupes (Star Headliner Variety) were scooped into 3/4-inch melon balls. Vacuum hydration was applied to the balls and they were then treated with prepared solutions of ascorbic acid, sugar, citric acid, sodium alginate, and calcium lactate. Samples from each of the treatments were frozen for two hours. A glaze was applied to four of the control treatments following storage; frozen samples were thawed and drained. Samples of ten treatments from three harvests were analyzed for yield, drip volume, soluble solids, pH shear value, color, and voluble solids. The results for the three harvests were statistically analyzed by (ANOVA), analysis of variance for comparison data.

Yield, drip volume, and total solids were the only parameters significantly different between harvests. It can be concluded that the material composition of cantaloupes and the treatment materials and methods did not react to produce significant quality improvement or loss.

Doebler, M. K. (1988). *Microcomputers and 4-H volunteer leaders: A study to determine attitudes, experiences, and self-perceived training needs of Pennsylvania 4-H volunteer leaders with regard to microcomputer use in traditional 4-H programs.* Master's paper, Pennsylvania State University, University Park.

The purpose of the study was to determine the attitudes, experience, and self-perceived training needs of Pennsylvania's 4-H volunteer leaders with regard to microcomputer use in 4-H. In addition, the study investigated volunteer leaders' receptivity to potential uses for the microcomputer in four traditional 4-H program areas: animal and poultry science, plant and crop science, food nutrition, and clothing and textiles.

The study's population consisted of an estimated 5,555 Pennsylvania 4-H volunteer leaders from four traditional areas of 4-H programming. A cluster sampling procedure was followed. A list of 1,271 volunteer leaders was generated from 15 randomly selected Pennsylvania counties and a random sample of 357 volunteer leaders was drawn from 1,271. Data were collected via a mailed questionnaire from 195 leaders, yielding a return rate of 55%. Statistical procedures used to analyze the data included frequencies, percentages, means, standard deviations, t-tests, and analyses of variance.

Respondents were found to be limited in their microcomputer experiences, but not entirely unexposed to microcomputer use. Those who had experience were likely to have used a microcomputer in an entertainment capacity. A majority of those leaders without microcomputer experience were not adverse to learning how to use it to help them manage their 4-H leadership

responsibility and/or to instruct 4-H'ers. The majority of respondents indicated that they would be willing to participate in microcomputer training if it were offered in the form of extension workshops. Leaders saw computer-assisted instruction (CAI) as a priority for a training program, and to a lesser degree, they would like to learn computer-managed instruction (CMI).

Overall, respondents held a positive attitude toward microcomputer use by 4-H leaders, and program area did not affect attitude scores; however, those leaders with previous microcomputer experience held more positive attitudes than did those leaders without experience.

Agriculture science leaders saw recordkeeping as the most important application for their clubs, followed closely by CAI applications. Food and nutrition leaders saw CAI as being most important, whereas clothing and textile leaders found using microcomputers as a piece of communications equipment as having the most potential for use in their clubs.

Furry, Marilyn M. (1988a). *At-home-income-generation: Impact on management, productivity and stability in families.* (Regional Project). University Park: Pennsylvania State University, Agricultural Experiment Station.

The purpose of this five-year research project is to examine the management and production activities of household managers who work at home for pay, the stability of the families in which they are members, and the impact of such economic activities on the social and economic structure of their communities.

Pennsylvania State University, specifically the Agricultural and Extension Education Department, is one of the nine universities representing the Agricultural Experiment Stations.

A pilot study determined what proportion of households contacted by telephone might be expected to contain one or more home-based workers. Data was obtained in telephone interviews of a sample of 65 telephone numbers selected from a rural stratum and 65 telephone numbers from an urban stratum. For Pennsylvania to have 65 interviews for each stratum, 1,779 telephone numbers were called in rural counties and 1,342 urban households were contacted. When the 65 urban and 65 rural households were interviewed, it was estimated the home-based business prevalence rate to be 5.7% for urban counties and 4.3% for rural counties.

Extrapolation of this information provided budget estimates for Pennsylvania to complete 120 thirty-five minute telephone interviews with home-based workers and the managers of the households. Estimated for 95% screening response rate and 85% eligible interview response rate, the budget commitment is $11,602.50. Preparation of the data for analysis, such as editing and coding, is incorporated in the budget from the Statistical Laboratory at Iowa State University.

Furry, Marilyn M. (1988b). *Farm/family management: Helping farm families.* (Staff Study, Smith-Lever Funds, Family and Economic Well-being Initiative). University Park: Pennsylvania State University.

The purpose of this educational program, through which farm families are supported by a farm and family management team, is to provide basic farm and family management information to meet current changes that directly affect farm families.

Specific objectives of this formative evaluation are to assist families (1) in analyzing their situations and identifying problem areas in farm and/or family management activities; (2) in planning any desired changes which impact on financial and management activities; (3) in using decision-making tools necessary for farm families to accomplish planned changes; (4) in establishing a recordkeeping system that will monitor and evaluate financial and management performance; (5) in formulating farm and family goals and establishing priorities; (6) in using various educational approaches including the helping process.

Findings during the first year of this evaluation project are: (1) all 16 farm families have determined and prioritized farm and family goals. (2) Thirteen of the 16 farm families established recordkeeping systems for the family and the farm. (3) All 16 families collected income and expenditure records for analysis. (4) Thirteen of the 16 families completed farm and household inventories. (5) Eleven of the 16 families completed mini-diary analyses and farm business analyses. Specific outcomes include increase pasture, hay yields, and milk production; assume ownership of new farm as well as rent present farm; reduce farm debt. (6) Specific family outcomes in progress or completed after farm business and family analysis are: one family started to remodel the farmhouse; three families separated accounts for the farm and family; one family started to build a new home to be completed in January 1989; one family expanded the cottage business; one family established credit in wife's name and one family reduced food expenditures.

Evaluation by the farm families will be completed December 1988 to determine their perceived and documented accomplishments.

Harrison, J. P. (1988). *Direct markets in Pennsylvania: An examination of rural and urban direct market consumers and vendors.* Master's paper, Pennsylvania State University, University Park.

This study investigated the direct marketing industry in Pennsylvania and compared buying habits of Pennsylvania consumers. The study described the characteristics of roadside and farmers' market operations in Pennsylvania and identified relationships between selected characteristics and urban and rural farmers' and roadside markets. This was done by using survey results of a 400-household telephone survey of farmers' markets, a survey of Pennsylvania farmers' market vendors and the Pennsylvania Roadside Market Survey. As a result of analyzing this information, it was possible to examine and to assess the potential that a strong direct marketing system had for the state.

As a result of the unique characteristics of direct markets, special consideration was used to identify a judgment sample of direct markets.

Twelve extension agents from Pennsylvania were asked to identify two farmers' markets and ten vendors within each market to be part of the sample. They were to use their own judgment in assembling a sample representative of farmers' markets. The judgment sample was used because of the loose organizational structure of farmers' markets. Two additional data sources were used.

The study showed that generally there were no distinguishing characteristics between direct market consumers in urban and rural areas. The majority (88.5%) of the shoppers in urban and rural areas were women. Although proportionately more men in urban areas than in rural areas do the shopping, they still represent a minority of shoppers. Urban and rural shoppers have approximately the same amount of education. Most shoppers had at least a high school education. The majority (80% rural, 68% urban) of the shoppers were married.

In addition, the study examined the frequency with which the farmers' market operators sold all their products. Only a very small percentage (1.7%) always sold all their products. About 33% usually sold all their products and 28.8% sometimes sold everything. The largest group (35.6%) never sold all their products.

Lyons, C. G. (1988). *Identification of curricula strategies for enhancing undergraduate experiences in colleges of agriculture.* Doctoral dissertation, Pennsylvania State University, University Park.

The primary purpose of this study was to identify hierarchical frameworks of the needed agricultural curricula content and delivery/methodology changes needed to enhance undergraduate experience in colleges of agriculture. The Delphi technique was used to generate a list of agricultural curricula change strategies. The purposive sample served as experts in agricultural curricula affairs and responded to the three rounds of the Delphi.

Questionnaire one generated 128 change strategies; 57 in the content area and 71 in the delivery/methodology area. These strategies were grouped under 11 major categories and rated by the sample in round two. As a result of the rating, questionnaire two resulted in a list of 22 change strategies; 14 in the content area and 8 in the delivery/methodology area. The sample ranked the items in both categories and the five highest ranked items were recommended as priority changes to be considered for implementation in college of agriculture curricula.

Umbaugh, W. L. (1988). *A comparative study of agricultural mechanics laboratories in Pennsylvania student-teaching and non-student-teaching centers.* Doctoral dissertation, Pennsylvania State University, University Park.

This study examined the agricultural mechanics facilities in Pennsylvania's student-teaching and non-student-teaching centers located in comprehensive high schools. The specific intent was to determine to what extent selected Pennsylvania vocational agricultural mechanics laboratories in

production agriculture programs did or did not meet the national standards.

A total of 30 vocational agriculture programs were selected; 15 production agriculture student-teaching schools and 15 non-student-teaching centers. The 30 laboratories were evaluated via on-site observations. Six agricultural mechanics laboratory evaluation categories, identified in the national standards developed for vocational agriculture mechanics laboratories by the U.S. Department of Education in 1974 were used: safety; budget; drainage, exhaust, and dust-collection system; electrical and compressed-air systems; housekeeping; and laboratory area.

Findings revealed the 30 Pennsylvania vocational agricultural mechanics laboratories fared poorly in meeting the 34 standards. Student-teaching centers met only 14 standards; in comparison, non-student-teaching centers met only 6 of the 34 standards. Significant differences were found between student-teaching and non-student-teaching center laboratories. Student teaching centers were more likely to have (1) a first-aid kit located in the department, (2) a laboratory equipped with electrical overhead busways, (3) storage provided for student coveralls and glasses, (4) the laboratory floor well maintained, and (5) a laboratory width of 40 feet. Non-student-teaching centers were more likely to provide safety instruction in advance of any laboratory work than student-teaching centers.

Whitman, B. A. (1988). *Extension nutrition pamphlets: Fast foods, fats and heart disease, vitamin and mineral supplements.* Master's paper, Pennsylvania State University, University Park.

The purpose was to develop and evaluate nutrition education materials targeted to one of extension's underserved audiences - young singles (unmarried men and women aged 20 to 34). A review of literature indicated that Americans are increasingly interested in nutrition and health. They are concerned about the relation of fat, high-sodium intake, and vitamin content of foods, but have difficulty making diet decisions as consumers surrounded by flashy advertising, fast food places, and little time to prepare meals at home. Specifically the materials were to deal with vitamin supplements, the relationship of cholesterol, fat, and coronary heart disease, and healthful foods from the fast food menu.

To determine which nutrition topics currently required new or updated materials a simple needs assessment survey was conducted. The nutrition specialist selected three county home economists with exemplary programs. They responded in a phone interview to a list of 20 topics. Eleven of the topics were rated as needed. Three were then selected for this study: nutrition supplements, fat and heart disease, and fast food. The completed materials (pamphlets) were then evaluated by both extension home economists and singles. Fifteen home economists attending a conference on campus used a Likert type scale and open-ended questions to evaluate the pamphlets. A purposive chunk sample of singles was taken during a "Singles Night" at a local supermarket. In addition, nine single graduate students participated as evaluators.

Overall the evaluations were very positive. At least 70% of both groups of evaluators responded that the pamphlets (1) were interesting to read; (2) were easy to understand; (3) were written in a logical manner; (4) would serve as a learning tool, and (4) motivate further learning about the topics. There were

two exceptions. Slightly less than 70% of the singles found the fats and heart disease pamphlet interesting to read and 28.6% of the home economists thought the information in this pamphlet easy to understand. The fats and heart disease pamphlet contained more technical or clinical information than did the pamphlets about vitamins and fast foods, which probably contributed to its being less easily read. It would seem that having educational materials evaluated by the target audience before being printed would do much to enhance acceptance of the final product.

TEXAS

Beard, F. R. (1987). *An evaluation of curricular requirements for future graduates of baccalaureate agricultural mechanization programs as perceived by program coordinators and prospective employers.* Doctoral dissertation, Texas A&M University, College Station.

There were two purposes for conducting this study. The first was to determine what modifications, if any, should be made to the current baccalaureate curricula in agricultural mechanization to prepare future graduates for employment in agricultural industry. The second was to assess the consistency of responses on curricular requirements between the coordinators of agricultural mechanization programs and employers of the programs' graduates.

Coordinators of 29 recognized programs of agricultural mechanization made recommendations for modifying existing curricula to prepare future graduates for employment in agricultural industry. Program coordinators identified 97 employers of their graduates who also made suggestions for changing the curricula. Responses from the two groups were analyzed and formed the basis for recommendations to change the curricula of agricultural mechanization programs.

Coordinators and employers recommended that greater emphasis should be placed on subject matter areas related to business science, communications, and agricultural mechanization. The courses identified as needing an increased number of required hours were computer operation/application, management/salesmanship, business finance, agricultural economics, accounting, and English composition and rhetoric.

The courses receiving the strongest recommendation for required hours to be decreased were range science, surveying equipment and application, physical education, forestry, horticulture, meteorology, philosophy, zoology, physiology, history, and literature.

Coordinator recommendations and employer recommendations were generally in agreement. Typically, employers recommended a greater increase in required hours than did coordinators.

Chu, Tah-Wei. (1988). *Selected factors related to job performance of fisheries extension agents in Taiwan.* Doctoral dissertation, Texas A&M University, College Station.

The purpose was to determine if factors existed that were related to the level of job performance of 33 of the 35 Fisheries Extension agents in Taiwan employed in January 1988.

The level of job performance of the agents was ranked by the director of the Extension Division of the Taiwan Provincial Fishermen's Association using a paired comparison technique. Agents were divided into equal-sized high, medium, and low job performance groups.

Data on factors related to the level of job performance were obtained from agents by questionnaire. It included three sections: (1) Personal characteristics (gender, marital status, age, tenure in extension, educational

attainment, subject matter of academic degree, prior work experience, and membership in organizations), (2) Job satisfaction, and (3) Self-directed learning.

Statistical analysis was accomplished by testing significance of the difference among job performance groups in regard to each selected factor at the .05 level. Chi-square, analysis of variance (ANOVA), and Student-Newman-Keuls (SNK) tests were employed to analyze data.

Nine of those ten factors examined (all of the eight personal characteristics and self-directed learning) were not related significantly to the level of job performance. However, a relationship approaching significance existed for agents' age, tenure, subject matter of academic degree, and membership in organizations. Nevertheless, it was concluded that personal characteristics in this study and self-directed learning could probably be disregarded in making decisions concerning evaluation of job performance of the agents.

A significant relationship existed only between the job satisfaction and job performance of the agents. It was also found that the most significant relationship between job satisfaction and job performance existed among high-performing agents. It was further concluded that a knowledge of the degree of job satisfaction would provide a basis for reassurance about the level of job performance of the agents.

Norris, R. J. (1988). *Perceptions of secondary agricultural science teachers toward proposed changes in agricultural curricula in Texas.* Doctoral dissertation, Texas A&M University, College Station.

The purpose of this study was to determine if relationships existed between characteristics of teachers of agricultural science and their current programs, and perceptions of these teachers toward proposed changes in the agricultural science curricula in Texas.

During the opening general session of the State Professional Improvement Conference for Teachers of Agricultural Science on August 12, 1987, 933 teachers were surveyed from a population of approximately 1,400. Indicating the extent to which they agreed or disagreed, teachers responded to 26 statements suggesting possible effects of curricular changes on FFA, SOEP, enrollment, program administration, and teacher inservice needs and nine statements concerning the methods used to bring about the changes.

Descriptive statistics were used for reporting the characteristics of teachers and their programs and teachers' perceptions. Correlational statistics were calculated to determine if relationships existed between characteristics of teachers and programs and teachers' perceptions. Discriminant analysis was used to determine the relationship between teachers' perceptions toward proposed changes, their "free choice" and "actual choice" concerning the new curriculum.

The major findings of the study were as follows: (1) The experience of the teacher had a significant inverse relationship to teacher perceptions toward effects on enrollment, SOEP, and FFA. (2) The number of schools in which the teacher had worked was inversely related to all scales. (3) Years spent as a student in vocational agriculture or as a member of the FFA were negatively

related to teacher perceptions. (4) As school size, community size, and current enrollment in agricultural science increased, the more positive were the teachers' perceptions. (5) Female teachers tended to be more positive concerning the changes than were their male peers. (6) The state supervisory area in which the teachers were employed influenced their perceptions toward the new curriculum. (7) The institution from which the teacher received his or her last degree had little influence on perceptions toward the proposed curricular changes. (8) The level of education of the teachers was not related to their perceptions toward the new curriculum. (9) A teacher's perception toward the "change process" was the single best predictor of his or her "free choice" and "actual decision" concerning adoption of the new curriculum.

Sedlacek, J. R. (1987). *Perceptions of training and performance in change agent roles by selected agricultural extensionists in Latin America.* Doctoral dissertation, Texas A&M University, College Station.

The purpose was to determine if agricultural change agents performed a variety of roles on their jobs, and how frequently nine specific roles described by Beal in 1981 were performed. Other questions were (1) whether or not training for these roles had been received, (2) what types of training may have been received, (3) whether or not this training was perceived as useful, and (4) whether or not it was perceived that training for these roles should be included in preservice or inservice preparatory programs. Did training for change agent roles increase over the past 25 years?

A rationalistic design was used to gather data from 101 persons in training programs offered by the Centro Internacional de Agricultura Tropical (CIAT), persons employed as change agents in ten Latin American countries. Information was gathered from August 1986 to March 1987 through questionnaires tested in Spanish and Portuguese. Descriptive statistics, reliability coefficients, and Pearson correlation coefficients were employed to analyze data.

Agricultural change agents did perceive being active in all change agent roles described by Beal. The majority were not trained for those roles. Change agents performed activities associated with the roles with differing frequencies, but had difficulty in thinking about their jobs in the context of certain activities associated with specific roles. Agents perceived that training for these roles should be included in their preparation, and that such training as had been acquired was useful. It was not possible to determine if training for change agent roles had increased over the past 25 years. A significant relationship existed at the .05 level between training received and an increase in the frequency with which a role was performed for the roles of Educator, Consultant, Enabler, and Broker. The role of Researcher and the overall role of Facilitator approached significance. The relationship for roles of Administrator, Organizer, Advocate, and Arbitrator was not significant.

VIRGINIA

Burke, S. R., & Hillison, J. (1988). *Practicing Agricultural Education Teachers' Evaluation of Pre-service Courses.* (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

The purpose of this study was to determine Virginia agricultural education teacher perceptions regarding the value of undergraduate coursework preparation for their positions as teachers. Objectives for the study included the determination of the value of undergraduate coursework by teaching specialty option, by years of teaching experience, and to draw implications for future teacher preparation.

Conclusions, based upon the findings, were (1) teachers rated college of agriculture courses as valuable; (2) teachers rated college of arts and sciences and college of education courses less valuable; (3) teachers rated agricultural education courses as more valuable than general education courses; (4) small differences were found by teaching specialty options; and (5) small differences were found by years of teaching experience. Among recommendations of the study were that teacher preservice programs should include more college of agriculture courses and more agricultural education courses. It was also recommended that college of arts and sciences courses not valuable to teachers should be deleted.

Camp, W. G. (1988a). *The induction process for beginning vocational education teachers.* (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

This was a part of a larger, ongoing study funded by the National Center for Research in Vocational Education, University of California, Berkeley. The overall study is an examination, both qualitative and quantitative, of the induction process for beginning vocational teachers at the secondary and postsecondary levels. The 1988 component of the study consisted of an extensive review and synthesis of the literature on teacher induction in an attempt to determine the existing knowledge base on the subject and to draw implications for vocational education.

The study found a massive literature on teacher induction, in general, but very little published on vocational teacher induction. The dominant theme in the general teacher induction literature centers around mentoring and teaching assessment. The most important conclusion of this part of the overall study was that research is needed to discover the nature and dynamics of the induction process for beginning vocational teachers. The ongoing study is an attempt to fill that void in the literature.

Camp, W. G. (1988b). *Participation in student organizations and student grades: A covariance structures analysis.* (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

The purpose of this study was to propose and test a causal model of student achievement, with participation in student activities — both

extracurricular and cocurricular – as the causative variable of primary interest. Using the High School and Beyond Sophomore Cohort data set, the researcher examined the relationship between those two variables, while accounting for the effects of sex, family status, prior achievement, and time-use habits. The study concludes that academic achievement is enhanced by student participation and questions the rationale behind rules excluding academically marginal students from participation in such activities.

Camp, W. G., & Hively, C. S. (1988). *A national study of the supply and demand for teachers of vocational agriculture in 1987.* (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

This was the twenty-third annual study of the supply and demand for teachers of vocational agriculture in the United States. The study was authorized by the Agricultural Education Division of the American Vocational Association. All head teacher educators and head state supervisors were surveyed. Supervisors were asked to provide detailed information on the agricultural education teaching positions, new teachers hired, sources of those teachers, and programs of agricultural education – at both secondary and postsecondary levels. Teacher educators were asked to provide information about student enrollment, numbers of graduates, and their placement.

The major conclusion of the study was that, for the third year, there was not a national shortage of teachers of agriculture at the secondary level. Another conclusion was that the rate of placement of teacher education graduates in teaching positions remains near its 25-year low of about 40%. The placement rate of extension education graduates in extension positions also remains dismally low at less than 10%.

Crunkilton, J. R. (1988). *Summary of the seminar on methods and management of practical programs. June 13–30, 1988, American Farm School, Thessaloniki, Greece.* (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

The purpose of this project was to coordinate a seminar at the American Farm School where educational leaders from developing countries in Africa could learn more about agricultural development, the Farm School as an educational system, and fundamental principles of a quality educational program.

Nineteen key educational leaders from eight countries participated in the seminar. The seminar delivery methods included formal lectures, field trips both on and off campus, demonstrations, hands-on experiences, practical skill exposure, participant teaching exercises, individual work and study sessions, and development of plans to take back to the home countries.

Participant evaluation of the seminar indicated a high satisfaction with the content and organization of the seminar. Major suggestions made centered around improvement of communication skills of selected program presenters, clearer objectives for field trips, and more time to address problems facing the participants in their home countries.

Fluker, P. L. (1987). *A Follow-up of Alcorn State University 1982–1986 agricultural baccalaureate degree graduates.* Doctoral dissertation, Virginia Polytechnic Institute and State University, Blacksburg.

The purpose of this study was to assess the quality and effectiveness of the faculty, curricula, and facilities in the Department of Agriculture at Alcorn State University as perceived by the 1982–86 graduates. A descriptive research design was used for this study, which involved 102 returns from the 160 graduates during these five years. Data were collected through a mailed questionnaire. Data were summarized by frequency distributions, percentages, and measures of central tendency.

Findings of the study indicated graduates perceived the effectiveness of the faculty as good, 77% gave the curriculum an excellent or good rating, and the quality of the facilities varied with graduates. Suggestions of courses to add to the curriculum were computers, oral communication, and engineering. The study also found that few graduates participated in civic organizations, would be willing to assist in college recruitment efforts, and that more effort should be made to expand the field and laboratory experiences.

Major recommendations were that communication strategies be developed with agricultural agencies and industries; studies be added that include computers, communication, and agricultural engineering; graduates be contacted to set up possible internships; and each department in the college analyze the data from its graduates to identify areas of strengths and weaknesses within graduates' own departments.

WEST VIRGINIA

Bonanno, S. C. (1988). *Major roles of agricultural extension agents in the agricultural technology delivery system in year 2000.* Master of Science thesis, West Virginia University, Morgantown.

The primary objective of this study was to determine major roles of agricultural extension agents in the year 2000 as perceived by state directors of extension services. State directors in the 50 states were asked to identify their perceptions of future major roles. Perceptions of all directors were then rated by the population to form a consensus of opinion. Of the 72 statements rated by participants, 10 were considered essential. The statement with the highest rating places the agent in a role of "problem solver bringing to bear the resources of the land grant university on the needs and problems of the clientele." Agents, according to directors, will also be an important link between research and clientele, a program planner, an educator, and a user of technology in information delivery.

Cochran, J. E. (1988). *Influences on the job satisfaction of vocational agriculture teachers.* Master of Science thesis, West Virginia University, Morgantown.

This study was designed primarily to determine the relationships between job satisfaction of the vocational agriculture teacher and marital satisfaction of the teacher and his or her spouse. Target population was the married vocational agriculture teachers in the Northeast Region of NVATA. Two instruments were completed by participants: the Purdue Teacher Opinionaire (job satisfaction) and the Dyadic Adjustment Scale (marital satisfaction). The Dyadic Adjustment Scale was completed by both the teacher and his or her spouse. Demographic data were also provided by participants. Stepwise multiple regression analysis was used to determine the best predictor(s) of teacher job satisfaction. Best predictors were the income category of earning less than $25,000 per year, the spouse's marital satisfaction, and the presence of children living at home.

Cowie, M. L. (1988). *Job satisfaction of College of Agriculture and Forestry teaching faculty at West Virginia University.* Master of Science thesis, West Virginia University, Morgantown.

Job satisfaction among the teaching faculty in the College of Agriculture and Forestry at West Virginia University and the association between job satisfaction and demographic variables were determined in this study. An instrument comprising a modification of Bowen's (1980) questionnaire, the Brayfield-Rothe "Job Satisfaction Index," and a request for demographic data was administered to faculty in the College. It was found that major satisfiers were the work itself, interpersonal relationships, achievement, responsibility, advancement, working conditions, and recognition. Policy and administration and salary were considered dissatisfying factors. Overall,

faculty find their jobs interesting and satisfying as measured by the Brayfield-Rothe Index.

ElAyouby, N. S. (1988). *Major problems which hinder the use of integrated pest management by farmers as perceived by pest management specialists.* Master of Science thesis, West Virginia University, Morgantown.

This study sought to determine principal reasons that integrated pest management techniques are not more widely utilized by farmers. Data were obtained from the pest management specialist in each state. A modified delphi technique was used to collect data. Of the 74 statements rated by specialists, 12 were identified as major problems. Lack of interdisciplinary research that stresses interaction between weed, insect, and disease control practices was considered most important. Program funding difficulties, lack of economic thresholds for specific crops and pests, and shortage of specialists and consultants were also considered major problems.

Howell, J. A. (1988). *Perceived training needs of cooperative extension agents in West Virginia.* Master of Science thesis, West Virginia University, Morgantown.

This study was designed to determine information and training needs of county extension faculty with respect to the various areas of the current plan of work. An adapted version of Borich's needs assessment model was used to develop the questionnaire for the study. All extension agents in West Virginia participated in the study. The greatest information and training need identified by agents was found in the category of economic development and jobs. Other major needs were found in the categories of large animals, field and forage crops, renewable natural resources, and children at risk.

Maines, W. M. (1988). *Correlational analysis of selected variable influencing safety attitudes of vocational agriculture instructors in West Virginia.* Doctoral dissertation, West Virginia University, Morgantown.

The primary purpose of this study was to determine the strengths and directions of the relationships between selected vocational agriculture instructor predictor antecedents, and the instructor's measured attitudes toward safety. The population included the 113 vocational agriculture teachers in West Virginia. An instrument was developed to measure instructor safety attitudes and 25 independent antecedents. Positive relationships were found between the home setting, instructor having had a serious accident, friend/close relative having been killed at work and the instructor's safety attitude score. Stepwise multiple regression analysis determined that the best predictors of instructor safety attitude scores were instructor's perception of his or her health hazard knowledge base, instructors having had a serious accident in the past, and instructors who had horticulture as a specialty area.

Nxumalo, N. N. (1988). *Perceived communications and support linkages of secondary/high school principals and agriculture teachers in schools of Swaziland.* Master of Science thesis, West Virginia University, Morgantown.

The major objective of this study was to determine the extent of perceived communications linkages between school principals and agriculture teachers in schools in Swaziland. Questionnaires used to collect data were largely patterned after one developed by Martin in 1986. Instruments were mailed to all agriculture teachers and principals in those schools that conduct agricultural programs. It was found that students have a very high interest in the agriculture program; there is little communication between the students and agriculture teacher; community support for the program is limited and there is little use of community resources in teaching the program; communications and support linkages are not well established between principals and teachers; there are limited informal and formal supervisory contacts between principals and teachers; and teachers perceive the schools agriculture supervisors as too demanding.

Odell, K. S. (1988). *Teaching vocational agriculture in West Virginia, 1917–1987.* (Staff study). Morgantown: West Virginia University.

This study examined the tenure characteristics of vocational agriculture teachers in West Virginia and trends in those characteristics over time. Population for the study (N=834) included all individuals who had taught vocational agriculture in the state for at least one year from 1917 to 1987. The frame was established using the History of Vocational Agriculture in West Virginia 1917–1987 compiled by W. H. Wayman in 1987. It was found that nearly one-fourth of all individuals who had taught vocational agriculture in West Virginia taught only one year. Another 16% taught only two years and 75% of all the teachers had taught 10 years or less. Occupations of former teachers (those not retired) were principally in agriculture or education related fields. Nearly 63% of the group had taught in a single school, 23% had taught in two schools, and the remainder had taught in three or more schools. Major decreases in teacher numbers occurred during the period 1942–1948 and again during the period 1967–1973.

Rajab, K. M. (1988). *Agricultural research needs and priorities in Zanzibar as perceived by administrators and extension workers.* Master of Science thesis, West Virginia University, Morgantown.

This study was designed to identify the most important agricultural research needs in Zanzibar as perceived by agricultural administrators and extension workers on the islands. Administrators and a stratified sample of extension workers were asked to identify major agricultural problems in need of research solutions. Items identified were then rated on a likert-type scale by the same group. Of the 86 items identified, 16 were rated as absolutely essential. Particularly important were problems associated with evaluation of

agricultural training for extension workers, development of farm equipment and machinery, eradication of sudden death and dieback diseases in clove plantations, and improved technology in providing spare parts for farm implements.

Snively, D. W. (1988). *Perceptions of agriculture faculty at land grant institutions in the northeastern United States concerning the land grant mission.* Master of Science thesis, West Virginia University, Morgantown.

This study was concerned with determining perceptions of agriculture faculty at land grant institutions concerning teaching, research, and service responsibilities, and how these three functions are perceived to be related to faculty promotion and tenure. The population consisted of agriculture faculty (N=1500) in the 12 land grant institutions in the northeast region of the United States. A sample of those faculty was surveyed by mail questionnaire. It was found that faculty perceive research to be the most important function of land grant institutions, followed by teaching and service, which are considered equally important. Faculty personally prefer teaching and research activities above those of service and feel that research is their major priority, followed by teaching and service, respectively. While faculty feel that teaching and research should be given equal consideration in tenure/promotion decisions, they perceive that research is considered most important by administrators.

Woloshuk, J. M. (1988). *Profile of West Virginia National 4-H Awards Program participants from 1967–1980.* Doctoral dissertation, West Virginia University, Morgantown.

This study was designed to develop a profile of characteristics of state winners in the West Virginia National Awards Program and to determine the influence of 4-H experiences on current occupational status and on leadership skills in occupations, community activities, and personal lives of participants. The 286 state winners from 1967–1980 were identified and surveyed through a questionnaire developed to determine respondent characteristics, occupational and educational information, and perceptions of influence of 4-H on the respondent's occupation and personal life. Aside from demographic information, it was found that nearly three-fourths of the respondents considered their experiences in the six 4-H categories important in their current occupations and in their personal lives, and more than 94% considered the leadership and personal development experiences as important in their current occupations and personal lives. As educational attainment of the participants increased, perceptions of importance of leadership experiences in their current jobs also increased.

Wright, R. W. (1988). *Organizational commitment of agents in the West Virginia extension service.* Master of Science thesis, West Virginia University, Morgantown.

Objectives of this study were to determine major factors related to organizational commitment among county extension agents in West Virginia, determine the level of commitment among agents, and determine relationships between organizational commitment and skill variety, task identity, job autonomy, feedback and work experiences. A questionnaire developed by Suandi in 1982 was used to obtain information from all county extension faculty in West Virginia. It was found that organizational commitment is not greatly influenced by job autonomy, job variety, high levels of task identity, or a feeling of solidarity among agents. Organizational commitment is positively influenced, however, by personal importance, group attitudes toward the extension service, self-image reinforcement, first-year job challenge, realization of expectations, role clarity, feedback, and age.

WISCONSIN

Anderson, Arlan M. (1988). *Survey of Wisconsin farm training instructors and farm training students to assess instructional microcomputer usage in the farm training program.* Master of Science thesis, University of Wisconsin, River Falls.

The purpose of this study was to compare selected personal characteristics of farm training instructors and farm training students with their perceptions of computer assisted instruction available to the vocational, technical, and adult education farm training program students. In this study, the selected personal characteristics of the farm training instructor – age, education, and experience in teaching farm training and the selected personal characteristics for the farm training student – age, education, and size of farm were compared to the instructor and students' perception of computer assisted instruction in selected farm financial management topics and the perceived value for the selected farm management topics.

The population consisted of the 58 farm training instructors teaching in the postsecondary schools in the state of Wisconsin during the 1987–88 school year. Ninety-five percent of the sample population responded to a mailed questionnaire. A random sample of 12 instructors from the state of Wisconsin were selected to survey one of their three or four classes of farm training students. Twenty student surveys were sent to each instructor. Seventy-nine percent of the 240 students responded to the survey.

Instructor respondents reported (1) that the greatest perceived value of "on-farm" computer instruction was in the financial management area; (2) that they thought computers will be accepted and computers were educational; and (3) there is a significant difference between the farm training experience of farm training instructors and the perceived value placed upon the selected financial management computer programs. Student respondents reported (1) a majority of the farm training students do not use the Wisplan computer programs; (2) a majority of the farm training students would like to own a computer within the next five years; and (3) farm training students did not differ in their perceived value of financial management computer programs.

Based on the findings and the conclusion of the study, the following five recommendations were made. First, farm training instructors should develop or receive the potential computer programs identified by the farm training students, especially the farm financial management programs. Second, farm training instructors must recognize the need for computer training by the farm training student. Third, farm training instructors must become cognizant of the different approach of "on-farm" instruction when using microcomputers and the effect of the approach once a majority of the students indeed own a microcomputer. Fourth, the VTAE system needs to study the benefits to farm training brought about by the introduction of the microcomputers. Future research ought to test the premise that computer technology is beneficial in this area. Fifth, it is recommended that this study be replicated in two to three years. This ought to expand information on the acquisition of computer training by the farm training students; the acquisition of microcomputers by farm training students; and the incorporation of computer enhanced "on-farm" instruction teaching technique by farm training instructors.

Ostheimer, J. R. (1988). *Survey of policies and perceptions of Wisconsin vocational agriculture advisory councils.* Master of Science thesis, University of Wisconsin, River Falls.

The purpose of the study was to determine practices used in operating local Wisconsin vocational agriculture advisory councils and to examine the perceptions of the vocational agriculture instructors concerning advisory councils' operations, functions, problems, and effectiveness. A comparison was made between the vocational agriculture instructor's years of teaching experience and the perceptions of the following: functions, procedures in operation, problems, and effectiveness.

The population for the study included all secondary vocational agriculture programs in Wisconsin. Eighty-one percent of the population responded to the mailed questionnaire. Two five-point, Likert-type scales were used to obtain data on the perceptions of the instructor.

Major findings of the study indicated that a typical high school vocational agriculture advisory council has one female, two to five farmers, one to three businessmen, and two or fewer professional members for a total of nine voting members. The administration, school board, and agriculture instructor would also belong as nonvoting members. At times, persons from the labor force, high school students, and professional agencies would be included in the membership. A typical council would have existed for about 12 years, been chosen by the agriculture instructor, and meet three times a year in the evening. The members would have three-year terms of membership, but the members could succeed themselves on the council. The council would most likely have new members each year and would not have developed a charter or constitution.

The data also showed no relationship between the agriculture instructor's year of teaching experience and (1) perceived values in the functions of advisory councils; (2) importance placed in procedure of operation of advisory councils; (3) perceived problems of advisory councils; and (4) perceived effectiveness of the advisory council.

The major recommendation included (1) a similar study should be conducted for advisory council members so that their ideas, comments and suggestions could be used to further evaluate advisory councils; (2) research should be conducted to see what should be the relationship between advisory council members and FFA alumni members; (3) information gathered should be incorporated into an in-service and/or preservice training for people in the agricultural education field and (4) all vocational agriculture programs should establish and utilize advisory councils, so that vocational agriculture will meet the needs of future students.

Swenson, Dwight L. (1988). *An assessment of Wisconsin vocational agriculture instructors' extended summer contract and FFA programs.* Master of Science thesis, University of Wisconsin, River Falls.

The research problem was an assessment of selected factors concerning the extended summer contract of Wisconsin instructors in agriculture as compared to their perceptions of participation in specific areas of FFA activities. The extended summer contract factors include total years of teaching

experience, local years of teaching experience, length of extended summer contract, salary basis for extended summer contract, and level of FFA participation in state and national competition. The specific areas of FFA participation include both individual activities and chapter activities.

The written questionnaire was directly distributed during the Wisconsin State FFA Convention in June 1988 to a sample of 70 advisors/instructors selected from the Wisconsin secondary vocational agriculture instructors population. Seventy-three percent of the sample population responded to the questionnaire. A five-point, Likert-type scale was used in the design of the perception portion of the questionnaire.

Major findings of the study indicated the majority of respondents had one to six FFA members competing at State or National levels of FFA activities. The respondents perceived the extended summer contract for public relations as very important. The representative perceived the extended summer contract as very important for the maintenance of supervised occupational experience programs. The current level of participation in state and national FFA contests was a good indicator of the perceived importance of the summer contract.

The major recommendations included (1) further research is needed to ascertain the impact extended summer contracts have upon the level of success in individual and FFA chapter activities; (2) there is a need to investigate additional factors which may be substituted for extended summer contracts within the total vocational agriculture/FFA programs; and (3) there is a significant increase in involvement with state and national FFA activities as an outcome of the extended summer contract.

CITATIONS
Research and Development Activities in Progress

GEORGIA

Manning, G. A., Jr. *Determining curriculum content for course work in peanuts in vocational agriculture for the 21st century: A futures study using the Delphi Technique.* Doctoral dissertation, University of Georgia, Athens.

Sheppard, D. J. *Attitudes of major constitutient groups toward recommendations for future directions of the vocational agriculture program in Georgia.* Doctoral dissertation, University of Georgia, Athens.

Varnadore, W. L. *Characteristics of the U.S. meats industry in the year 2000 with implications for curriculum development in vocational agriculture.* Doctoral dissertation, University of Georgia, Athens.

IDAHO

Bauer, M. E. *Farmer skill assessment and the adoption of alternative crops in north Idaho.* Master of Science thesis, University of Idaho, Moscow.

Burton, L. D., & Pals, D. A. *Attitudes of secondary instructors toward improvement of teaching/learning—A survey of vocational agriculture instructors in the Northwest.* (Idaho Agricultural Experiment Station Staff Study). Moscow: University of Idaho.

Dean, W. J, *Class titles and their effect on student registration.* Master of Science thesis, University of Idaho, Moscow.

Gerrard, J. G. *A comparison of the effects of high-low group performance contingencies on student achievement.* Master of Science thesis, University of Idaho, Moscow.

Mundt, J. P. *The teacher induction year: An ethnographic field-based study.* Doctoral dissertation, University of Idaho, Moscow.

Nance, S. E. *A survey of junior and senior high school students in the Magic Valley.* Master of Science thesis, University of Idaho, Moscow.

Riesenberg, L. E. *The impact of the teaching and learning process in education in agriculture.* (Idaho Agricultural Experiment Station Staff Study). Moscow: University of Idaho.

Smyer, G. L. *The status of agriculture and the role of vocational agriculture in the Mini-Cassia area.* Master of Science thesis, University of Idaho, Moscow.

Wilson, J. A. *A needs assessment of Minidoka County.* Master of Science thesis, University of Idaho, Moscow.

ILLINOIS

Illinois State University, Normal

Wood, Jeff A. *Decline of vocational programs: 1983–1988.* (Staff Study). Normal: Illinois State University.

University of Illinois, Urbana-Champaign

Hamzah, R. *The use of problem solving teaching among vocational agriculture teachers in Illinois.* Master's equivalency study, University of Illinois, Urbana-Champaign.

Hamzah, R. *The use of school land laboratories for teaching agriculture in West Malaysia secondary schools.* Doctoral dissertation, University of Illinois, Urbana-Champaign.

Law, D. A. *Core curriculum revision project.* (Staff Study). Urbana-Champaign: University of Illinois.

Matulis, J. K. *Perceptions of vocational education held by guidance directors in Illinois comprehensive high schools.* Doctoral dissertation, University of Illinois, Urbana-Champaign.

Osborne, E. W. *Use of problem solving teaching among student teachers in agricultural education.* (Staff Study). Urbana-Champaign: University of Illinois.

Wolf, R. E. *Methods used by young farmer program advisors for conducting young farmer programs.* (Staff Study). Urbana-Champaign: University of Illinois.

IOWA

Akpan, M. J. *An assessment of the educational methods used by 4-H volunteer leaders in selected Iowa counties.* Master of Science thesis, Iowa State University, Ames.

Andrews, D. H. *Attitudes of selected Iowa farmers toward natural resources conservation.* Master of Science thesis, Iowa State University, Ames.

Bounaga, L. *Factors affecting adoption of soil conservation practices by landowners of highly erodible land.* Master of Science thesis, Iowa State University, Ames.

Bruening, T. H. *Educational implications of perceptions held by Iowa farm operators regarding selected conservation practices.* Doctoral dissertation, Iowa State University, Ames.

Cassina, E. H. *Attitudes and role perceptions of extension agents in Argentina.* Master of Science thesis, Iowa State University, Ames.

Creswell, J. L. *Identification and analysis of educational delivery systems utilized in pesticide training education programs.* Doctoral dissertation, Iowa State University, Ames.

Drake, S. K. *An analysis of management styles in the Iowa Cooperative Extension Service.* Doctoral dissertation, Iowa State University, Ames.

Elliot, A. V. *An analysis of indicators used in evaluating process-oriented agricultural extension education projects: A comparison of approaches used in community development in the U.S. and selected developing countries.* Doctoral dissertation, Iowa State University, Ames.

Frick, M. J. *Agricultural literacy of public school students.* Doctoral dissertation, Iowa State University, Ames.

Gamon, J. A. *Inservice education needs of agriculture teachers.* (Staff Study). Ames: Iowa State University.

Kahler, A. A. *Development of higher-order thinking skills through agricultural education programs.* (Staff Study). Ames: Iowa State University.

Kelling, A. *Movement of Cooperative Extension into the information age as perceived by Iowa farmers.* Master of Science thesis, Iowa State University, Ames.

Kesler, K. C. *Factors related to the Iowa Cooperative Extension Service worker's personal satisfaction and professional performance.* Doctoral dissertation, Iowa State University, Ames.

King, D. R. *The change process in agricultural education.* Doctoral dissertation, Iowa State University, Ames.

Kunwar, N. *Roles and responsibilities of agricultural extension personnel in Nepal.* Doctoral dissertation, Iowa State University, Ames.

Martin, R. A. *An assessment of model adult education programs in Iowa.* (Staff Study). Ames: Iowa State University.

McEnany, C. A. *Factors related to occupations of Waverly-Shell Rock High School male graduates.* Master of Science thesis, Iowa State University, Ames.

Memon, M. Y. *Professional education competencies needed by agricultural extension officers in Pakistan.* Doctoral dissertation, Iowa State University, Ames.

Mohammed, I. *Perceived effects of new orientation materials on induction training of new extension agents.* Master of Science thesis, Iowa State University, Ames.

Rajasekaran, B. *Role of the biosciences in the study of agriculture as perceived by vocational agriculture leaders in U.S.A.* Master of Science thesis, Iowa State University, Ames.

Rambeaud, 0. E. *Relationship between adoption and attributes of beef production technologies in Argentina as perceived by extension agents.* Master of Science thesis, Iowa State University, Ames.

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